

Are Moving Van Lines Going to Treat You Better?

CONSUMER REPORTS

SEPTEMBER 1966 / FACTS YOU NEED BEFORE YOU BUY / NO ADVERTISING / 50 CENTS

Washing Machines

How CU rates 16 medium-priced units

Clothes Dryers

Comparing 21 electric and gas models

Super 8/Single 8 Movie Projectors

Ratings include some
that also project double 8 film

Playpens

16 wood-slat and plastic-mesh models

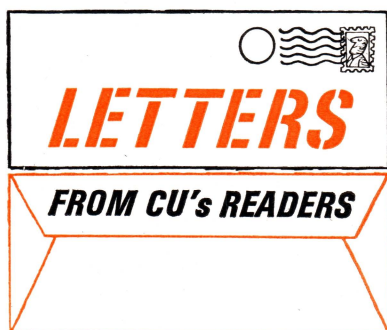
Volvo and Triumph

Testing 2 medium-priced imported sedans

TV Repairs

Service records by brand and year





Tempest in the teapot

Enclosed are two labels from *Tetley Instant Tea*. The older label is from the 3-ounce package, which I bought some time ago. The 1½-ounce package was bought last week. Each was priced at 59¢. The jar with the 1½ ounces does not contain malto-dextrin, which may make up the difference in weight. But, should it be priced the same as the 3 ounces? WADING RIVER, N.Y. D.W.

Readers have sent us similar queries about changes in *Nestea Instant Tea*. Its distributor, The Nestle Co., explains that a different manufacturing process is now being used. In the old method, carbohydrates had to be added to the tea to preserve the flavor. The new versions of these products consist of only tea; they contain the same amount of tea per spoonful, but weigh considerably less. Thus, if you use the same volume of the new product, as the label directions tell you to do, the price per cup of tea will remain the same despite the sharp increase in price per ounce.

Crime that pays?

In "The Docket" for July, I note that crime *does* pay. Gerald Patrick Oleary was fined \$5000 for mail fraud—only about 8½% of the \$60,000 take. HOT SPRINGS, ARK. C.H.D.

This situation is not uncommon in economic fraud cases, as any reader of "The Docket" well knows. It's a rare instance when a convicted defrauder must pay the law's stiffest penalty, and then usually only after repeated convic-

tions. Even the stiffest fine allowed may not match the "take," though of course a jail sentence may ensue also.

In setting penalties, courts often consider such factors as whether restitution has been made to victims. So far as the Post Office Department knows, Mr. Oleary made no restitutions. However, he didn't get off quite as easily as our Docket item indicated. Besides the fine, a POD staff member informs us, Mr. Oleary got a jail sentence (suspended) and was put on probation for five years. This fact was not mentioned in the POD's original news release; hence our omission.

The irony of Safeguard

It was with great interest that I read your report last year describing skin irritation as a result of exposure to children's bubble-bath preparations. My two-year-old son had just recovered from a rash as a result of using such a product.

More recently he developed dermatitis again in spite of bathing in bubble-bath-free water. Not long before, we had started using *Safeguard* soap and consequently strongly suspected this soap as the offending agent. A pediatrician tells me that he has seen a number of children with rashes that developed after the use of *Safeguard*. One wonders whether the name *Safeguard* is ironic. DE RIDDER, LA. R.J.S.

It is quite possible that, in this instance, the name *is* ironic. The medical literature contains references to several cases of photosensitivity reactions (in which the skin erupts on exposure to sunlight) following the use of *Safeguard* soap. A few similar reactions have been attributed to the use of *Lifebuoy*. And another leading antiseptic soap, *Dial*, contains an ingredient, hexachlorophene, that is known to cause allergic skin eruptions in some people. *Dial* also contains a chlorinated carbanilide. The ingredient of *Lifebuoy* reported to cause photosensitization is a brominated salicylanilide. *Safeguard* contains two salicylanilides (plus two carbanilides).

All these soaps are effective to a degree in reducing body odors. When they are used regularly, their anti-

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SEPTEMBER 1966 VOLUME 31 NUMBER 9

CU's **PRODUCT RATINGS** are usually given in order of their estimated overall quality, without regard to price. **BEST BUY** Ratings are accorded to products that are not only rated high in overall quality but also priced low and should thus provide more quality per dollar than other Acceptable products. Models are check-rated (✓) when, in CU's judgment, the test samples prove to be of high overall quality and significantly superior to those of noncheck-rated models tested for the same report. A Rating of one model is not to be considered a Rating of other models sold under the same brand name, unless so noted in the report.

PRODUCTS TESTED are bought on the open market by CU's shoppers. So long as quality varies within brands and products change behind their names, no test results can give infallible guidance. What CU's Ratings offer is comparative buying information that should greatly increase the consumer's chances of getting his money's worth. Ratings are based on laboratory tests, controlled use-tests, expert opinion, or a combination of these factors. CU pledges that any opinions entering into its Ratings of products shall be as free of bias as it is possible to make them. Please do not ask for special tests or for product information beyond what appears in CONSUMER REPORTS.

THE PURPOSES OF CONSUMERS UNION are to provide consumers with information and counsel on consumer goods and services . . . to give information and assistance on all matters relating to the expenditure of the family income . . . and to initiate and to cooperate with individual and group efforts seeking to create and maintain decent living standards.

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ONCE OVER 424

Botany's new raincoat finish; all clear on the bargain front; super-supermarkets; much ado about low-calorie peanuts; the paper dress caper; stricter labels on some common over-the-counter drugs

AUTOMATIC CLOTHES WASHERS 428

These middle-of-the-line models give you the flexibility you need for washing the variety of fabrics found in the home today, without the overgadgetry common in the more expensive top-of-the-line models. We check-rated one of the 16 machines tested

SUPER 8/SINGLE 8 MOVIE PROJECTORS 437

The new 8mm movie films, with their 50% increase in picture-frame area, can't be shown on an old double 8 projector. We put 22 of the new type through their paces and check-rated five. Five of them will also project double 8 film. Nine Canadian models are also covered

ELECTRIC AND GAS CLOTHES DRYERS 442

Most models tested, covering all brands in the washer project, worked quite well. All but one have an automatic dryness control, a feature that we judged useful. One electric model requires no venting

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Some 108,000 CU subscribers, owners of TV sets in 13 brands, told how much they had spent for repair of their sets

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Some new ICC rules go into effect January 1; they are intended to give the moving consumer a better break, but how well will they work?

PLAYPENS 452

Both metal-frame-with-mesh and wood-frame-with-slats types were among 16 models rated for safety, sturdiness, and convenience

THE CASE OF THE FISHY "NO" 456

A Federal official has called for increased research to guide consumers to wise product selection; what he has overlooked is the vast store of test data buried in Federal files. Here's an interesting case in point

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Road-tests of two medium-priced imported sedans

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Once Over

Botany's new raincoat finish

Ideally speaking, a water-repellent topcoat should hedge your bets with the weatherman. It should be comfortable and stylish for fair weather, and it ought to keep you reasonably dry if a heavy downpour should catch you far from shelter.

Coats that came fairly close to the ideal have been discovered in past CU tests, most recently the project reported in last April's issue. But no coat has proven impervious to a heavy, steady downpour, and most have lost a sizable degree of repellency after a number of launderings or dry-cleanings.

So we pricked up our ears when the Botany GMR Corporation (NYC), according to trade reports, claimed a new waterproofing process obsoleting all earlier ones. We sent shoppers in search of coats with the new waterproofing, which are being marketed

under the *Botany 500* and *Worsted-Tex* brands at prices from \$39.95 to \$65. Two men's coats were bought, one tan and one black, both labeled *Worsted-Tex International Voyager with Hydronair Plus*. The label also said, "Cloth H 11 6049; 75% Dacron polyester/25% Avril [rayon]." The price tag said \$45.

The results of CU's water-repellency tests on the outer fabric of both coats in the "as received" state were, if not unprecedented, encouraging. Before being laundered or dry-cleaned, the fabric fended off a simulated rainstorm better than did any fabric in the April group, and better than all but the most water-repellent fabrics in topcoats tested prior to that. We judge that a newly bought *Worsted-Tex* coat with the Botany treatment will give real protection against a sustained, heavy rain.

A sterner test is one on dry-cleaned fabrics, since dry-cleaning reduces the effectiveness of most water-repellency

treatments that we have seen used in topcoats. At some point the coats will probably need to be reproofed, and after that they will need reproofing with every dry-cleaning.

Although the *Worsted-Tex* was no exception in this respect, its outer fabric retained at least as much of its water repellency after the laboratory equivalent of three dry-cleanings as did any coat in the April group.

According to the label, the *Worsted-Tex* coats are wash-and-wear launderable, too. But the coats we tested disproved this claim. After the laboratory equivalent of five home launderings and one actual home laundering, the outer fabrics of the *Worsted-Tex* retained little water repellency. The wash-and-wear results, in terms of appearance, were none too good, either.

Without having put the coats through the exhaustive tests of a complete raincoat project, CU's textile technicians estimate that these coats would have ranked with the best in the April Ratings for wearers who intend to send them to a dry-cleaner (coin-op dry-cleaning is not recommended). Certainly, the coats may be said to have "obsoleted" the *Botany 500* we tested earlier this year. But the stories of obsoleting every raincoat are overdone, we would say.

When we checked the currency of the coats, a Botany spokesman told us that those we tested were probably from an early lot. The repellency of later production is supposed to have been improved. However, the "old" new coats may still be in the stores, he concedes, and there is no way a con-

All clear on the bargain front

It's no news that the largest package of a product isn't necessarily the most economical, but it usually takes real mental gymnastics to find this out. This excerpt from an advertisement sent in by a reader is unusually obliging: you can see at a glance that the small size is the better buy—by 21¢ a half-pound at that.

WE HAVE
FREEZE
DRIED
MAXIM
CONCENTRATED
INSTANT COFFEE

4 oz. Jar
69¢

8 oz. Jar
\$1.59

sumer can distinguish between the two.

One of the tested *Worsted-Tex* coats has a rubberized or plasticized interlining at the shoulders and yoke for complete protection at these areas, which receive the full force of the rain. (The *Botany 500* coat tested for April also had such an interlining.) Although this interlining can be of real extra value in a heavy rain, it further reduces the circulation of air and the escape of perspiration vapors. Some wearers may find that these traits of the interlining make them uncomfortable on warm days.

Roller skates, anyone?

If today's supermarket, with its 8000 items, gives you a shopping headache, here's an item calculated to make you lay in a big supply of aspirin (or write a quick letter to your Congressman, supporting the shopping-simplification provisions of the Truth-in-Packaging bill): The American Paper Institute has estimated that in five years big supermarkets will be stocking 12,000 different items.

Much ado about peanuts

Low-calorie peanuts? They might not be such a bad idea at that for people who really enjoy munching but have to watch their weight. After all, one ounce of salted peanuts has about 165 calories, and so the calorie count of each little 10¢ bag (1½ ounces) of them is about 250.

The U.S. Department of Agriculture, always anxious to help farmers sell more crops, has developed a process that can remove more than half the calories from peanuts. Most of the oil is squeezed out and then the peanuts are boiled in water to swell them back into shape.

The first company attempting to capitalize on the process is the Tom Huston Peanut Co. (Columbus, Ga.), which has begun marketing *Tom's Low Calorie Salted Peanuts*. Each 10¢ sample purchased by CU has 1⅛ ounces in a cellophane bag. The peanuts are small, rather lighter in color than

ordinary salted peanuts, and somewhat crunchier as well.

Several CU staff members tasted *Tom's* peanuts and also, for comparison, some large cocktail peanuts. Most of our tasters liked the familiar peanuts better. Nevertheless, they did not find *Tom's* unpalatable. These new peanuts, then, might be worth a try for the sake of the figure—if the calorie reduction is really significant.

According to the label, *Tom's* "contain 50% less calories and 40% more protein by weight than an equal amount of roasted peanuts." However, according to our estimate, which is based on a laboratory analysis of the fat content of *Tom's* peanuts, this statement is not wholly accurate no matter how you read it. Ounce for ounce, *Tom's* would indeed appear to have 40% more protein than ordinary roasted peanuts, but less than 25% fewer calories.

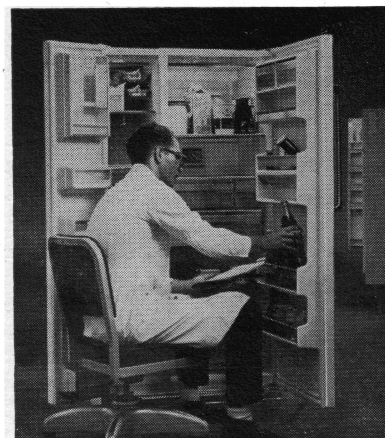
On the other hand, if the phrase "an equal amount" refers to volume instead of weight, *Tom's* does contain, by our estimate, close to 50% fewer calories per cup than ordinary peanuts. The higher percentage results from the fact that peanuts lose weight in the new defatting process. It takes more *Tom's* peanuts than ordinary peanuts to make an ounce. But by this comparison, *Tom's* can no longer rightly claim a 40% advantage in protein.

For the weight-watcher, these nice distinctions probably don't mean very much. It comes down to this: A handful of *Tom's* instead of an equal-volume handful of other peanuts probably does cut the caloric intake by about 50%. If the peanut eater eats peanuts by the bag, he'll get about 150 calories in a 10¢, 1⅛-ounce sack of *Tom's*, compared with about 250 in a 10¢, 1½-ounce bag of, say, *Planter's*.

If all this sounds confusing, it bothers the Food & Drug Administration, too. Last May, the FDA seized *Tom's Low Calorie Salted Peanuts* on charges that the low-calorie label is false and misleading and that the label also lacks required information on ingredients and dietary properties. A spokesman for the firm told CU that a new label, saying something like "partially defatted," will soon be used.

Of further interest may be the fact that the FDA has proposed that, effective next December, no food may be

Work in Progress



The October issue will feature the year's second Ratings report on refrigerators; it will cover the French-door, bottom-freezer and new side-by-side models

OTHER PROJECTS SCHEDULED FOR FUTURE ISSUES

PORTABLE TYPEWRITERS

Use-tests by a panel of typists, as well as laboratory tests, are being used to evaluate about 25 nonelectric models

AUTOMOBILE BATTERY CHARGERS

A look at the utility and safety of home-use-type chargers

ELECTRIC CAN OPENERS

A review of the talents, reliability, safety, and convenience of about two dozen models priced from \$8 to \$30

LOW-COST TAPE RECORDERS

Lightweight, battery-powered models are being tested; prices: \$35 to \$100

CHILDREN'S BLANKET SLEEPERS

Ratings and buying tips for garments serving as both pajamas and blankets

OVER-AND-UNDER SHOTGUNS

We set up tests of this increasingly popular type to follow up last year's project on side-by-side models

ELECTRIC HEATING PADS

How safe—and convenient—are these pads? The models being tested are priced from about \$3 to \$10

Color television sets

Life insurance

Low-cost microscopes

Card table sets

Electric road-racing sets

Ski bindings

FM/AM table radios

Stereo pickups

Seat belt retractors

Soldering guns and irons

Electric food mixers

Quote without Comment

“You add a lot of extra salesmen—free—with an S&H Green Stamp Incentive Program. They’re your salesmen’s wives. . . . When you award their husbands S&H Green Stamps for sales performance, you automatically involve the little woman. Through her you’ve got an incentive that works after 5 o’clock, and even on weekends.” —*Sperry & Hutchinson advertisement in THE WALL STREET JOURNAL.*

“The [hosiery] industry has been . . . pushing panty-hose. These . . . can retail for as much as \$9 or more. A \$9 pair of panty-hose can run just as fast as a \$1 pair of regular hose, and they don’t cost all that much more to manufacture. All hose are made with much the same basic production equipment: In fact there is often no difference in the cost of production of a \$1.95 brand-name pair of hose and a 69-cent pair.” —*FORBES MAGAZINE.*

“The current concern over unsafe cars was described as a fad by W. B. Murphy, president of the Campbell Soup Company. ‘It’s of the same order as the hula hoop—a fad. Six months from now, we’ll probably be on another kick,’ Mr. Murphy said.” —*THE NEW YORK TIMES.*

“There’s maybe no business like show business, but some businesses get somewhat confused. Like the one that OPENED ITS DOORS for the first time Monday on South First Street with a ‘Grand Clearance Sale.’” —*SAN JOSE (CALIF.) TRIBUNE.*

“How factual should drug advertising be? The question underlay much of the discussion of the promotion of sales of over-the-counter products at the Proprietary Association meeting. . . . No one disagreed, even in private, with FDA Commissioner Goddard’s fervent insistence on truthfulness. But there was considerable dissent, tacit and otherwise, from the implication that to be scrupulously truthful means to be excessively factual.” —*DRUG NEWS WEEKLY.*

ONCE OVER continued

labeled “low-calorie” unless it contains no more than 15 calories per serving and no more than 30 calories in an amount normally consumed daily. *Tom’s* wouldn’t comply no matter how you read the label.

The paper dress caper

Even the name, *Paper Caper*, sounds rather like a gag. And we’d say—after a good look, a few tests, and some beyond-the-call-of-duty wearings by some women on our staff—that it took some cheek (complete with tongue) for the Scott Paper Company to market its new wear-it-once paper dress.

The *Caper* is available by mail-order at a price of \$1 plus 25¢ handling charge from Scott Paper Co., Box 1966, Philadelphia. It comes in the one style shown in the photograph below (somewhat less shapeless with a belt, which is not supplied), in four sizes—petite (3 to 6), small (7 to 10), medium (11 to 14), and large (15 to 18)—and in two patterns—red “bandana” and black-and-white “op art” (shown). It’s made from two-ply paper, similar to paper toweling, but reinforced and impregnated to make it reasonably flame-resistant (it didn’t ignite when held in a strong gas flame for 15 seconds).

The dresses we examined were



rather sloppily made—having seams that easily opened at the ends, panels not well aligned, and patterns not matched. And the paper “fabric” is not very strong. One wearer, who wore a belt, put her finger through the dress when pulling the skirt down. Another found that her purse tore the dress rubbing against it as she walked.

The printed color has a tendency to rub off if it gets damp. But it’s not likely to stain the wearer’s slip, since it is only on the outer layer of paper.

What might you use it for? A house dress for messy jobs? Not if the job is rough. Nor if you might spill water on yourself; the label warns that soaking the dress (or washing or dry-cleaning it) makes the fabric “dangerously flammable” after it dries, and our textile laboratory confirmed the validity of the warning. A laundry-banishing travel dress? It wrinkles rather badly when you sit on it. One wear-tester suggested that the *Paper Caper* might be all right as a substitute garment in case a guest gets caught in a soaking rain. Well, perhaps.

Somewhere behind the Scott Paper Company’s cheek there is apparently a bit of conscience (or perhaps it’s only an eager promotion man). When you buy the *Paper Caper*, Scott gives you the chance to recoup a substantial portion of your \$1.25 outlay—provided you are willing to take it out in the company’s paper towels, paper napkins, paper cups, facial tissues, and sanitary napkins. There’s 52¢ worth of discount coupons for these products packaged with each dress.

Stricter labels for some common drugs

A new labeling requirement issued by the Food and Drug Administration for a number of over-the-counter remedies raises a question about hazards to vision posed by some products that may be in your medicine chest.

The new rule, which became effective July 5, applies to any product that has in its list of ingredients belladonna, atropine, hyoscyamine, scopolamine (hyoscine), hyoscyamus, stramonium, or other related chemicals. These substances, which are sometimes used in cold remedies, sleeping

pills, and motion sickness preventives, may cause serious eye injuries, the FDA says, in anyone with glaucoma or excessive pressure in the eye. Glaucoma is quite often present in people past 40 years of age without their being aware of it.

The new label warning will say: "Warning—Not to be used by persons having glaucoma or excessive pressure within the eye, by elderly persons (where undiagnosed glaucoma or excessive pressure within the eye may be present), or by children under 6 years of age, unless directed by a

physician. Discontinue use if blurring of vision, rapid pulse, or dizziness occurs. Do not exceed recommended dosage. Not for frequent or prolonged use. If dryness of the mouth occurs, decrease dosage."

In sleeping preparations containing scopolamine or scopolamine amine-oxide, the warning about use by children applies up to age 12.

We suggest that readers check their medicine cabinets for products containing these ingredients, and add to the label any missing warnings that are appropriate to their families.

FOR SEPTEMBER . . . USE YOUR BUYING GUIDE

■ As the leaves start drifting down from the trees onto your lawn, perhaps you are thinking of buying a lawn sweeper. Your Buying Guide Issue can give you a big assist. Turn to page 197 for a complete discussion of this product as well as Ratings of 14 models.

■ Is that old kitchen range just limping along? Before replacing it, consult the Buying Guide Issue. Starting on page 14 is a discussion of the relative merits of electric and gas models, along with points to remember when making your choice between the two types. And there are Ratings that detail the performance and convenience characteristics of various models, as well as special features and optional accessories.

■ In many households, September means a switch from casual summer apparel to more formal clothing. And this, in turn, may mean more ironing. If a steam-spray iron is an urgent need, check page 123 of your Buying

Guide Issue. (If you can manage a few more months with your old iron, we plan to rate new models of this product early in 1967.) To assist your ironing in other respects, the Buying Guide has helpful tips and Ratings for spray starches (page 121), ironing boards (page 126), and ironing board covers (page 128). And, if your tap water has a high mineral content, you may be interested in the discussion of water demineralizers for use in filling irons (page 160) useful.

■ Now that indoor living is returning as the order of the day, you may feel that you should do something about that drab den, family room, or other part of your house that needs a new paint job. Before shopping for paint, read the Buying Guide Issue's Ratings reports on interior latex and semigloss paints. This section, starting on page 185, includes tips on how to apply the various paints tested, type of tool to use (roller or brush), and helpful hints on clean-up.

CU'S ANNUAL BUSINESS MEETING

The 1966 Annual Meeting of Consumers Union will be held at CU's headquarters, 256 Washington Street, Mount Vernon, N.Y., at 10 A.M., on Friday, September 23, 1966.

At this meeting, reports of officers and the executive director will be presented and the annual balloting for directors will take place.

All CU members are cordially invited to attend.

Follow-up

INSTANT BREAKFAST. Several readers have pointed out that one serving of *Carnation Instant Breakfast*, when mixed with whole milk as directed on the label, provides about 290 calories rather than 128 calories (CONSUMER REPORTS, July 1966). Our reference was to the calories added to milk by mixing *Carnation* with it. Either way you count it, the nourishment is not as much, day in and day out, as CU's medical consultants think a normal teen-ager should get from his daily breakfast.

UNITRON. A product called *Unitron*, whose unsubstantiated claims to cut drastically auto fuel and oil consumption were mentioned in our letters column last year (CONSUMER REPORTS, March 1965), is around again. According to the February 1966 issue of *Facts*, published by the Cleveland Better Business Bureau, only the company name, Sperry Dynamics Corp., has been changed—under legal prodding last summer from the Sperry Rand Corp. The company is now called Penn-Owens, Inc., Division of Universal Dynamics Corp. The direct-mail pitch, says the BBB report, remains similarly extravagant, implying "great scientific breakthroughs, access to secret government files and a host of other pseudo-mysterious-scientific-shrouded 'facts.'"

ROAST PORK. The optimum internal temperature, according to the U.S. Department of Agriculture, to assure juicy, flavorful, tender roast ribs or loin of pork is 170° as registered on a meat thermometer (CONSUMER REPORTS, March 1966). The old theory that 185° was best has been knocked down, says the USDA, by 10 years of research at the Iowa Experiment Station, which also recommends an oven temperature setting of 325° or 350°. The research did not cover other cuts of pork; however, 170° is safely above the 137° temperature necessary to kill any trichina parasites that have found their way into pork.

AUTOMATIC WASHING MACHINES

WE TESTED 16 MIDDLE-PRICE-LINE MODELS THAT CAN PROVIDE YOU WITH ADEQUATE VERSATILITY

Our appliance engineers consider that one of the medium-priced clothes washers in most brand lines will prove to be the sensible choice for most users.

What you're very likely to get in a \$200 to \$250 middle-of-the-line unit are at least two speed combinations (normal agitation-normal spin, slow agitation-slow spin); a variety of selectable wash and rinse temperatures to meet the needs of the various fibers and finishes of today's washable fabrics; more than one fill level; and provision for soaking or prewashing clothes. With a few exceptions, these provisions can be found in all the tested models.

Fill 'er up?

Most manufacturers claim for their models a maximum capacity of 12, 14, 15 or, in the case of the *Wards*, *Hotpoint*, and *Easy* models tested, even 16 pounds. At the same time, their instructions admonish the user to "load loosely" or to "make sure that tub is not overcrowded"—advice with which we agree. Overcrowding a washtub can produce nonuniform washing, increased fabric damage, annoying tangling, overflow of items into the outer tub, and extra strain on the machine. Only the makers of *Maytag* and *Speed Queen* take what CU would consider the best approach and do not specify how many pounds of dry clothes their machines can handle.

Actually, if a typical cotton wash consisting of socks, shirts, underwear, bath towels, dish towels, sheets, and pillowcases is loaded loosely into a washer as it should be, it will be difficult to load as much as is claimed. We tried to load 12 pounds of just such an assortment into our test samples, and in each instance we were unable to get the entire load into the machine without packing it tighter than we judged desirable.

Problems with tub capacity rarely occur in families that usually send flatwork to a commercial laundry and divide the rest into several loads (white, light and dark-colored cottons, synthetics, wash-and-wear items, etc.). Where there is a need for large tub capacity, the buyer might be best off with the *Wards*. Under similar loading conditions, we estimated that it could take about one-third more clothes than most of the other models. In contrast, the *Kelvinator* and *Norge* would take one-fourth less clothes than most of the other models, and the *Frigidaire* about 15% less. It's important to note, though, that on the basis of our tests every machine in the project is likely to wash clothes somewhat better with a 5-pound load than with an 8- or an 11-pound load. So, if you want any washer to do its best cleaning, keep the loads relatively small.

The machines were tested for their washing ability in both hard and soft water and with three load sizes, 5, 8, and 11 pounds, each being composed of the cotton assortment mentioned earlier. The wash water was hot (140°F) and the rinse water warm (except for the low-ranking *Wizard*, the only model that could not be preset for hot wash, warm rinse). Maximum wash times available on the regular cycle were used, as were maximum wash fill levels.

Four popular detergents were used: one high-sudsing powder (*Tide*), one low-sudsing powder (*Condensed Dash*), one high-sudsing liquid (*Wisk*), and one low-sudsing liquid (*Cold Water All*). Each was added to the wash as the machine manufacturer's instructions prescribed. The detergents were used in the same concentration for each washer, approximating for the machine of average wash fill the amount of detergent recommended in the package instructions. We found, however, that some of the machines (noted in the Ratings) showed signs of oversudsing with the high-sudsing detergents. If such a problem arises, switching from a high-sudsing to a low-sudsing detergent should resolve it.

We evaluated the cleaning ability of the machines by measuring the light reflected, before and after washing, from standardized synthetically soiled swatches secured to various items in each wash load. Seven models showed somewhat superior washing ability.

Detergent costs per wash

Although we did not set out to rate detergents, this test also provided some indication of the relative cleaning ability of the detergents used. Using hot wash water, we found that *Tide* and *Cold Water All* outperformed *Wisk* and *Condensed Dash* in all but two machines. These two, the very similar *Easy* and *Hotpoint*, did best with *Tide* and about equally but less well with the other three products. In cost per wash, *Tide* was least expensive. We paid an average of 25¢ a pound for this product; its cost per wash, for a machine of average wash fill, was 5 to 5½¢. Most expensive was *Cold Water All*; at an average of 40¢ a pint, it cost about 10¢ per wash, for a machine of average wash fill—an increase over *Tide* that might not be offset in water-heating savings if cold instead of hot water had been used. (Note too, that *Cold Water All* was tested only in hot water and we cannot offer any information on its use in cold water.)

Half of CU's tests were done in soft water, the hardness of which was between 1 and 2 grains. The other half were done in water with a hardness of about 17 to 18 grains.

This is very hard water, and its use reduced washing ability slightly in all machines and with all detergents.

Items washed in six of the machines tended to be relatively free of lint. The lint filters of the *RCA Whirlpool* and *Sears* are built into their water-flow systems and are self-cleaning. Most of the other machines have a separate filter, which should be cleaned out after each wash. Among the models tested, only the *Frigidaire* has no lint filter, but linting in this machine was nevertheless average. Even the best washers in this respect, however, didn't give a completely lint-free wash. So, in sorting, separate lint givers from lint attracters.

In sand disposal, five machines turned in a superior performance; three others did a little less well, and the rest were judged poor. In tangling tests, the *Kelvinator* tended to tangle clothes quite severely when washing 8-pound or larger loads. The *Sears* and *Norge* also tangled clothes but to a lesser extent, and only when washing larger loads. We found that all bleach dispensers diluted the bleach adequately before it reached the clothes.

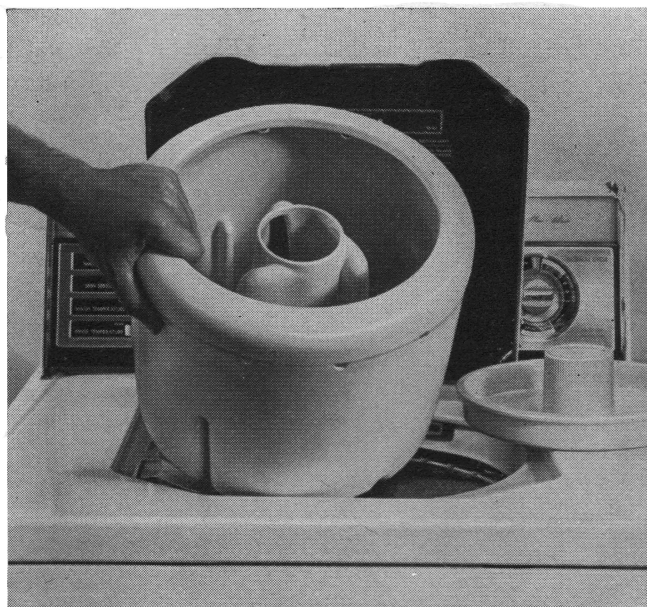
Finally, we checked on water extraction—an important consideration because the wetter the clothes, the longer they take to dry. Best in extracting water in the final spin was the *Wards*. The *Wizard* was poorest.

Control flexibility

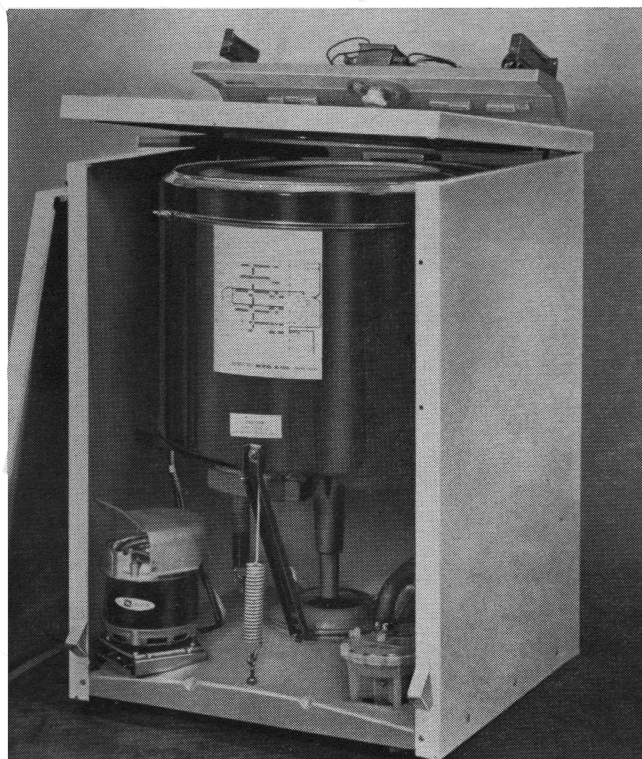
Most of the washers have separate controls for water temperature and speed and a timer to regulate the phases of the cycle or cycles they provide. These give the user considerable flexibility in adjusting the washing program to the contents of the wash load. In the remaining models, water temperature or speed or both are programmed automatically either by selecting a cycle on the timer or by setting a single additional control coded to the fabrics being washed. These controls make it simpler to set the machine for particular combinations of soil and fabric being washed. But they make it difficult for you to vary conditions from those supplied automatically.

We think that a washer's settings should include a hot, warm, and cold wash, a warm and cold rinse, normal and slow wash and spin speeds, and a timer that can be set for both long and short wash periods. The more flexibility you have in selecting these settings the better you can adapt the machine to the increasing variety of fibers and treatments used in contemporary washables. Thus the appropriate program for colorfast cottons and linens is hot wash, warm or cold rinse, and normal wash and spin speeds. Noncolorfast cottons, on the other hand, generally require a warm wash. Sturdy wash-and-wear items can usually take a hot wash, but the more delicate ones need a warm or even a cold wash. Wash-and-wear clothes generally benefit from an inflow of cold water before or during extraction, a cold rinse, and a slow spin, for this program helps prevent wrinkles from setting in them.

Some fibers like rayon or acetate are weaker while wet and so should receive a short, gentle agitation. Wool articles shrink less, and any color which tends to bleed should do so less when a cold wash setting is used. A cold wash may also be perfectly adequate for regular fabrics that are only slightly soiled—a point that is worth keeping in



GE's "Mini-Basket," a separate, small tub for very small loads you want to wash separately, not only proved convenient to use but it also let you save both on detergent and on hot water



You can reach many internal components easily through the opened front of the Maytag (and some others). This can keep labor costs down when you have the machine repaired

AUTOMATIC WASHING MACHINES

continued

mind should you want to conserve your hot water supply.

Besides their regular timer cycle, most of the washers tested have one or more additional cycles for prewash and/or soak, for wash-and-wear, for small loads, or for fabrics that require gentle washing. A separate prewash cycle can be helpful in loosening heavy soil or stains before the regular cycle.

The backsplash panel of each model tested is raised, and sometimes slanted, for easier reading and adjustment of controls, but not one was found to be free of cracks and grooves that hamper cleaning, or of surfaces that might be hard to get at in some installations. Certain models can be neatly installed flush against the wall, others—as the Table of Specifications, page 433, indicates—require a space of several inches for water and drain hoses. Other factors that relate to installation and ease of loading are noted in the Ratings.

The GE Mini-Basket has merit

Mention must be made of GE's "Mini-Basket," which we found both convenient and economical. It is a small, removable plastic tub (about $\frac{1}{2}$ cubic foot of usable capacity) that comes with the machine, fits snugly on top of the big tub's agitator, has its own agitating vanes and its own setting on the backsplash's water level control, washes its little loads (of about 2 pounds or less) about as well as the regular tub washes its big loads, and does the job with less detergent and at least 10 gallons less water than the other machines tested would use at their smallest fill setting. Of course you'd have to find a place to store the "Mini-Basket," and you'd have to be wary of its tendency to oversuds with high-sudsing detergents (the manufacturer recommends the use of low-sudsing detergents). But these seem very minor drawbacks in a convenient and economical device.

If your washing machine is to be located where you might be bothered by its clicks, thumps, and hums, note that the check-rated *Maytag* and the *Philco* and *Kelvinator*

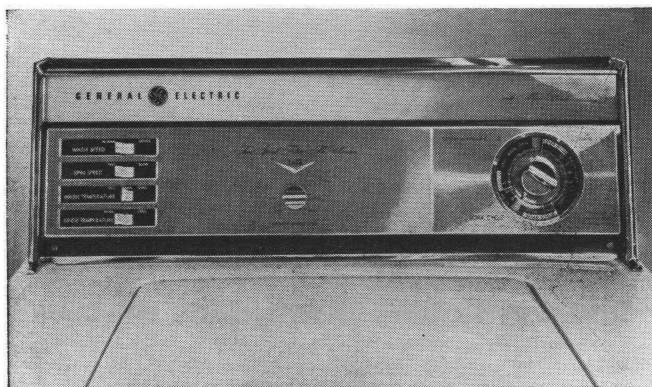
were judged quietest. The *Norge* and *Wards* were noisiest.

Half the machines guard against excess vibration with a switch that automatically shuts down operation if the load unbalances. Four other machines showed no need for such protection—with CU's deliberately unbalanced load they went right on running. Three of the four remaining models vibrated excessively with an unbalanced load, while the *Frigidaire* emitted a rather strong, acrid odor every time the load it held became severely unbalanced. This odor may alarm some users and indicated to us a possibility that inner components were being subjected to excessive wear. With any washer that shows a sensitivity to imbalance, be sure you throw in some heavy bath towels, say, for balance whenever you wash your bathmat or similar item.

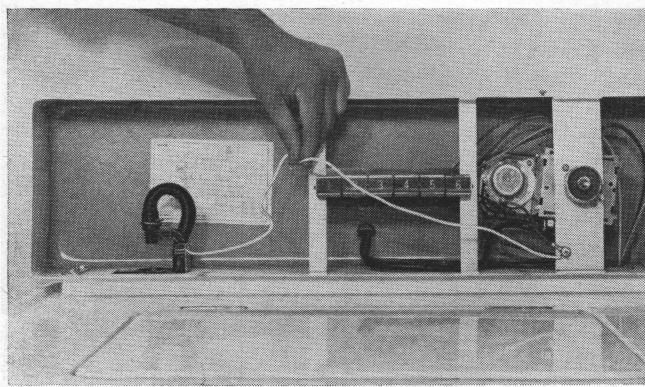
Water consumption

The Table of Specifications tells you the amount of water each of the test models used under the conditions specified. Users whose hot or cold water supply is marginal, whose water rates are high, or whose sewage disposal system is less than adequate may be especially interested in the possibility of using less water when they wash small loads. All the models permitted partial fill, but with varying degrees of convenience. Most convenient were those, cited in the Ratings, that could be set at partial fill for both wash and rinse before the machine was started. There were sharp differences among the machines in the water they consumed at their maximum fill setting, but these can be explained in part by the differences in tub size. The picture can change considerably, however, when using the wash-and-wear cycle. The *RCA Whirlpool* uses 23 more gallons at this setting than in its regular cycles, the *Sears*, 12 gallons more, the *Kelvinator*, 9. This additional water is used to cool down the clothes before the spin cycle, and thereby reduce wrinkling. But CU's experience indicates that the results achieved with these "thirsty" machines will probably not be any better than those attained with machines that use appreciably less water to cool down the clothes.

If you are trying to conserve hot water, our advice is not to buy an optional "suds saver" for the purpose—it



The General Electric has well-placed, separate controls for temperature, speed, timing, and water level. This gives you the versatility you need to wash a wide variety of fabrics



The cabinet on some samples of the Blackstone may require an extra grounding connection: for example, a wire from the ground terminal (right) to a screw on the fill tube bracket

involves using dirty water over again. Use a cold rinse instead; it will save you from one-third to one-half, depending on the model, of the hot water that you would otherwise use on the regular cycle. You have this choice, selectable at the start of the cycle, with 10 of the models.

Finally, for some users, the kind of fill—timed or metered—is important. With a timed fill, the water runs into the tub for a given number of minutes, regardless of the water pressure. With a metered fill, the water stays on until it has reached the desired level in the tub. It would be wise to choose a washer that has a metered fill if you have very low water pressure.

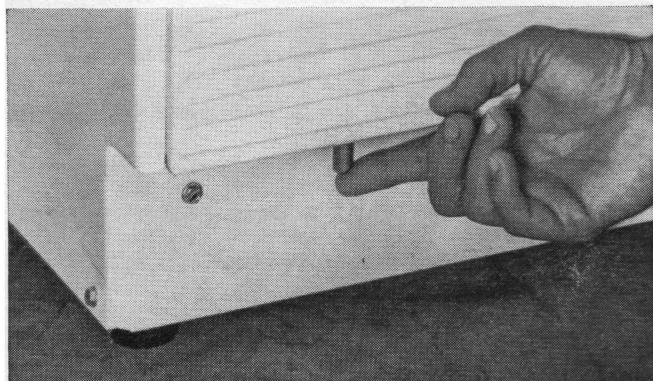
Safety provisions

With respect to washing machines, the obvious rule for safety is to keep hands out of the washer while the machine is on, especially while the tub is spinning. The *Westinghouse* has an interlock that prevents opening of its lid during the spin. Most other models have a switch that stops moving parts if the lid is opened during the spin; or, better yet, any time the lid is opened during the cycle.

Most machines have a brake which brings the tub to a quick stop from a spin, but the tubs of some other models took an inconvenient and possibly unsafe minute or so. The Ratings note those that took $\frac{1}{2}$ minute or longer.

Every tested washer has a three-wire connecting cord with a grounding-type plug, which should be plugged into a grounding-type outlet. Use an adapter if you don't have this kind of outlet, but make sure that its grounding wire is properly grounded. (Refer to page 87 of your 1966 Buying Guide Issue for more advice on this subject.) In the *Blackstone*, however, the manufacturer apparently relies on a screw and lockwasher to establish proper contact between cabinet and backsplash, and in CU's sample a layer of porcelain defeated this objective. As a result, the control console was grounded correctly, but the remainder of the cabinet was not, so that a failure of some electrical component within the main body of the machine could make it live. This machine has been rated Conditionally Acceptable, the condition being that a better grounding provision be installed (see photo, facing page).

The *Easy* and *Wizard* were also rated Conditionally



The reset button for the *Norge's* unbalance switch, which is located close to the floor, was inconvenient to reach. Nor could it be reset using the toe of your shoe, CU's testers found

Acceptable because, while replacing a bulb in the panel, you might contact exposed live terminals (see Ratings).

Durability and servicing

Porcelain enamel is far more resistant to discoloration and scratching than baked enamel. All the tested washers have at least their tops finished in this material. Most lids are, too. We consider porcelain enamel or stainless steel essential for tubs, and all test washers met this requirement.

More than half the samples were in some way defective as received. The deficiencies included such things as chipped porcelain, missing or defective dispensers, broken back-splash panels, an improperly adjusted lid switch or unbalance switch, a lid that would not stay up, a defective timer, or a leaking water pump; in some instances, instructions were missing. And within the relatively short testing period, six models acquired a few rust spots.

Moral: carefully examine the washer you've bought as soon as you receive it, and recheck from time to time. Have defects repaired as soon as they appear, particularly while the guarantee remains enforceable.

Each Rating of a model for which relevant information was available includes a statement about how its brand as a whole stood in CU's survey of readers' repair experience with washers of the nine model years from 1957 through 1965. For a write-up of the survey itself, consult the March 1966 issue of *CONSUMER REPORTS*. Changes in a current model may affect its brand's future repair record—for better or worse—but meanwhile a guide to its predecessors' past strength or weakness remains of interest.

Prices, guarantees, and installation

As already noted, nearly every washer tested is intermediate in its brand's price range. But we had to include the top-of-the-line *Blackstone* to obtain some of the features we wanted to check. The *Easy*, too, is a top-of-the-line model; a less expensive unit which might have met our criteria was being discontinued. Finally, *Norge* has two lines of washing machines which differ in claimed capacity. The latest versions of the larger-capacity units were not, however, available in time for testing, so only the smaller-capacity line is represented in our product.

The models differ markedly in their guarantees. Most are covered for repair or replacement of defective parts for one year, including free labor, but a few leave the question of labor—free or not free—up to mutual agreement between the purchaser and the dealer.

It is usually wise to let your dealer make the installation. The washer will need a location having nearby sources of hot (at least 140°F) and cold water with easy-to-reach shut-off valves, a suitable drain, and an a-c power supply not being used by any other appliance that draws moderate or high current. The circuit to which the machine is connected should be protected by a 15-ampere slow-blow fuse or circuit breaker, and the machine should stand on a sturdy, level floor. The unit should be properly grounded, as should all other appliances within reach. The installer should check the washer for proper operation in all cycles after he has completed the installation.

Turn page for Ratings

RATINGS OF AUTOMATIC WASHING MACHINES

Listed in order of estimated overall quality on the basis of laboratory tests, engineering evaluations, and judgments of convenience. Closely ranked models differed little in overall quality. For dimensions, water consumption, and other data see Table on facing page. Except for mail-order brands, there are usually no manufacturers' list prices; but see the price survey, below.

All models are top-loading machines for operation on a-c only; come with a 3-wire grounding-type cord; have a porcelain-enameled top and, unless otherwise indicated, a porcelain-enameled tub and lid, a cabinet finished in baked enamel, lids hinged at rear, but no backsplash lamp. Except as noted, all have a metered fill and a timer that can be preset for less than maximum wash time. Choices of water temperature available and choices of speed, other than normal-speed wash and spin and slow-speed wash and spin, are noted in the Ratings. Unless otherwise indicated, all did well in sand disposal and were average in water extraction, linting, noise, and other features and characteristics. Machines are usually available in color as well as in white—check with your dealer. Frequency-of-Repair record (see story) is omitted where insufficient data were available to establish one for the brand.

ACCEPTABLE

✓ **MAYTAG A-606** (Maytag Co., Newton, Iowa). Washing ability, somewhat better than that of most other models tested. Relatively good protection against overflow of small items into outer tub. Separate soak cycle. Hot wash with warm rinse; warm or cold wash with cold rinse. 3 presettable fill levels. Has lint filter and fabric-softener dispenser. Has unbalance switch, but washer was less likely to become unbalanced in spin than most other machines.

Safety switch stops machine any time lid is opened. Relatively quiet. Cleaning raised trim of backsplash judged somewhat inconvenient. Service access from front for many components. *Model A-406* (not tested) appears similar but speeds are limited to normal agitation and spin. Frequency-of-Repair record for brand, best of all washing machine brands surveyed.

¶ *The following models were judged relatively high in overall quality, but each had certain deficiencies or limitations that may be important to some users.*

GENERAL ELECTRIC WA-850B (General Electric Co., Louisville, Ky.). Washing ability somewhat better than that of most other models tested. Low-sudsing detergents may be needed for some loads to prevent oversudsing. Relatively small amount of linting. Has shorter cycle for wash-and-wear and delicate fabrics. Has separate "Mini-Basket" for washing very small loads, a desirable feature (see story). Hot, warm, or cold wash with warm or cold rinse. Speeds also include normal agitation with slow spin and slow agitation with normal spin. Continuous range of presettable fill levels from "low" to "high" and special setting for "Mini-Basket." Combination lint filter and detergent dispenser must be removed to load and unload clothes—a minor inconvenience. Has liquid-bleach dispenser. Optional fabric-softener dispenser, \$6.10, judged satisfactory. No unbalance switch; some noise and heavy vibration if load became unbalanced during spin. Splashed some water out when lid was opened during fills. Safety switch stops machine if lid is opened during spin. Has full-width backsplash lamp, judged easy to replace. *Model WA-950B* (not tested) appears similar but has bleach dispenser that admits diluted bleach late in wash period instead of at

PRICE SURVEY: WASHING MACHINES

To judge from CU's shoppers' price survey of 20 market areas throughout the country, washing machine retail prices vary widely from location to location but, usually, much less widely from dealer to dealer in a given location. Thus, though the national price spread for *Westinghouse*, for example, is nearly \$100, in New York \$229.95 was the only quotation our shoppers got. No region had consistently high or low prices, nor did we discover any overall pattern of regional price maintenance.

According to our data, the check-rated *Maytag* is, for most buyers, very likely to be the most expensive model tested. In some locations, the difference between its price and that of the *GE*, its runner-up in the Ratings, might make the *GE* an attractive buy.

Although our price survey included a *Sears Kenmore* model, it was replaced by the *Sears Kenmore 51471*, which is rated but it was too late for us to obtain price quotations for the new model.

Installation charges are normally from \$5 to \$10. Sometimes, but not often, they are included in the

selling price; usually—but check on this—they cover an operational run-through. If your particular installation, however, involves extra work on drains and pipes, etc., the charge might come to \$20 or \$25.

	Range	Average
MAYTAG A-606	\$244.00-\$339.95	\$276.02
GENERAL ELECTRIC WA-850B	209.00- 279.95	235.34
WESTINGHOUSE LAF-590	197.00- 290.00	230.28
RCA WHIRLPOOL LPA 780	189.95- 290.00	224.99
WARDS SIGNATURE 6626	229.95- 249.99	238.74
PHILCO W-2F4	189.47- 259.95	219.80
HAMILTON WA405	218.00- 259.95	235.17
FRIGIDAIRE WCDK	188.00- 259.95	223.84
NORGE AWG-1220	178.88- 249.95	200.19
SPEED QUEEN A-49	189.95- 269.00	219.30
HOTPOINT LW-680	198.00- 279.95	235.19
KELVINATOR W-728	198.88- 279.00	226.90
BLACKSTONE BA-750	235.95- 289.00	260.61
EASY WA-222	189.88- 269.00	223.75
WIZARD 2634	198.00- 219.95	205.21

TABLE OF SPECIFICATIONS AND PERFORMANCE OF WASHING MACHINES

In order of Ratings	OVERALL DIMENSIONS [Ⓐ]				HOT WATER USED [Ⓔ]		Total water used [Ⓒ]	Maximum wash time	Total time, regular fabric cycle [Ⓒ]	Lid safety switch
	Height (lid closed)	Height (lid open)	Width	Depth	With cold rinse	With warm rinse				
✓ MAYTAG A-606	43½ in.	51¼ in.	25½ in.	27 in.	—	30 gal.	39 gal.	13½ min.	34 min.	Yes
GENERAL ELECTRIC WA-850B	44½	51¼	27	25*	22 gal.	36	44	19	45	Yes [Ⓓ]
WESTINGHOUSE LAF-590	42½	53	27	25	—	41	57	14	39	Yes [Ⓓ]
RCA WHIRLPOOL LPA 780	43	50½	29	25½*	16	29	36	14	35	Yes [Ⓓ]
WARDS SIGNATURE 6626	44	55½	27	26¾ [Ⓔ]	23	36	53	12	42	Yes [Ⓓ]
PHILCO W-2F4	43¾	58¾	26¾	26¼*	—	25	36	12	32	Yes [Ⓓ]
SEARS KENMORE 51471	43	52¼	29	25½*	—	27	35	14	33	Yes [Ⓓ]
HAMILTON WA405	44	51¼	27¼	27	20	36	51	12	38	Yes [Ⓓ]
FRIGIDAIRE WCDK	44	53¼	27	26½ [Ⓔ]	11	23	36	11	32	Yes
NORGE AWG-1220	45	52¼	25½	27	11	23	35	10	34	Yes [Ⓓ]
SPEED QUEEN A-49	43	52	25¾	28	16	25	33	11	34	No
HOTPOINT LW-680	46	51½	25¾	27¼	—	29	48	15	45	No
KELVINATOR W-728	45	52¼	27	28¾	—	24	35	12	31	Yes
BLACKSTONE BA-750	43¾	50¾	26	27*	18	27	40	14	40	No
EASY WA-222	43¾	51½	25¾	28	17	29	48	15	45	No
WIZARD 2634	46	55	28	27¼	24	—	49	15	44	No

[Ⓐ] To nearest ¼ in.; adjustment of leveling legs can add up to 1½ in. to height figures. Machines that cannot be installed flush to wall—indicated by an asterisk (*)—may require up to 3 in. more depth for hose connections.

[Ⓔ] Water pressure at 40 lb. per sq. in. with 8-lb. mixed cotton load and regular fabric cycle using hot wash and largest fill

setting; dash indicates rinse option not available automatically.

[Ⓒ] Using maximum available wash time.

[Ⓓ] Stops machine during spin only.

[Ⓔ] Special kit available for flush to wall installation; requires special location of drain.

[Ⓔ] Flush installation depends on location of plumbing.

beginning. Model WA-650B (not tested) appears similar but lacks "Mini-Basket" and bleach dispenser, speeds are limited to normal agitation and spin, and it has a 3-position water level selector (the 2 larger levels differ relatively little). Frequency-of-Repair record for brand, average.

WESTINGHOUSE LAF-590 (Westinghouse Electric Corp., Mansfield, Ohio). Washing ability somewhat better than that of most other models tested. Only fair sand disposal; traces of sand deposited on clothes in subsequent loads. Relatively good protection against overflow of small items into outer tub. Has separate cycles for prewash and soak; soak cycle includes nonagitated soak period that user must terminate by advancing timer to spin. Hot or warm wash with warm rinse; warm or cold wash with cold rinse. Continuous range of presettable fill levels from "low" to "high." Color-coded markers on wall of tub are correlated to fill control to aid in selecting level of fill according to size of load. Has lint filter and fabric-softener dispenser; removal of latter improves convenience of loading and unloading. No unbalance switch, but there was only slight increase in vibration when load became unbalanced during spin. Lid locks automatically during spins, remains locked for 1 min. after motor is deenergized to let tub come to a stop—a good safety feature. Lid can be opened before end of cycle by turning timer to "off." However, this negates some of safety feature as tub takes ½ min. to stop. Lid hinged at left side. Service access from front for many components, but water connections at back are not identified "hot" and "cold"—a possible inconvenience. Brand's top-loading machines introduced too recently to have a Frequency-of-Repair record.

RCA WHIRLPOOL LPA 780 (Whirlpool Corp., Benton Harbor, Mich.). Washing ability somewhat better than that of most other models tested. Relatively small amount of linting. Has separate wash-and-wear cycle and shorter cycle for delicate fabrics; wash-and-wear cycle consumed 59 gal. of water, of which 49 were cold when warm wash and cold rinse were selected (see story). For heavy soil, regular cycle may be preceded automatically by a short prewash. This

"SuperWash" adds 10 min. to cycle and requires about 4 additional gal. of water and additional detergent. Hot or warm wash with warm or cold rinse; cold wash with cold rinse. Agitation and spin speed automatically controlled by timer so that user cannot vary established combinations. Uses normal agitation with slow spin on wash-and-wear cycle; slow agitation with slow spin available only on shorter cycle. Three presettable fill levels. Has self-cleaning lint filter. Has fabric-softener dispenser, mounted on bracket on tub's inner wall: judged somewhat less convenient to use than others tested. No unbalance switch; some noise and heavy vibration if load became unbalanced during spin. Safety switch stops machine if lid is opened during spin. Projection over rear of tub made loading and unloading somewhat inconvenient. Lid somewhat unstable in open position. Model LPA 560 (not tested) appears similar but lacks wash-and-wear cycle and fabric-softener dispenser and has more limited selection of water temperatures and fill levels. Frequency-of-Repair record for brand, average.

WARDS SIGNATURE Cat. No. 6626 (Montgomery Ward), \$229.95 plus shipping. Washing ability somewhat better than that of most other models tested. Judged to be able to take a somewhat larger load than other machines tested. Low-sudsing detergents may be needed for some loads to prevent oversudsing. Relatively large amount of linting. Water extraction, best of all machines tested. Relatively good protection against overflow of small items into outer tub. Machine's versatility judged good, but user who wishes to vary conditions in a specific manner must, until coding is memorized, consult chart on lid—a slight inconvenience. Has separate cycles for prewash and soak; the latter, lacking agitation to dissolve and disperse detergent, is designed for stain removal. Hot wash with warm or cold rinse; warm or cold wash with cold rinse. Speeds also include normal agitation with slow spin. Continuous range of presettable fill levels from "low" to "high." Lint filter, which projects over the back of the tub, was judged tricky to remove; but its removal improves convenience of loading and unloading. Has liquid-bleach dispenser. Buz-

AUTOMATIC WASHING MACHINE RATINGS continued

zer sounds when unbalance switch operates. Safety switch stops machine if lid is opened during spin. Noisiest model tested. Lid hinged at left side but can be reversed to open from other side (lid safety switch must also be reversed). Has full-width backsplash lamp with separate switch. Service access from front for many components.

¶ *The following machines had deficiencies judged more serious or more numerous than those found in preceding models.*

PHILCO W-2F4 (Philco Corp., Sub. of Ford Motor Co., Philadelphia). Washing ability, satisfactory. Only fair in sand disposal; traces of sand deposited on clothes in subsequent loads. Water extraction, somewhat below average. Not as well protected against the overflow of small items into outer tub as most other models tested. Somewhat less versatile than many other machines; normal cycle with hot, warm, or cold wash is limited to a warm rinse, and wash-and-wear cycle with hot, warm, or cold wash is limited to a cold rinse (no cold wash and rinse on normal cycle). Continuous range of presettable fill levels from "low" to "high." Has combination lint filter and detergent and fabric-softener dispenser. No unbalance switch; only slight-to-moderate increase in vibration when load became unbalanced during spin. Safety switch stops machine if lid is opened during spin. Smooth timer knob judged slippery to grasp with wet hands. Relatively quiet. Lid hinged at right side; can be reversed to open from other side. Has full-width backsplash lamp with separate switch. Service access from front for many components. *Model W-2F3* (not tested) appears similar but lacks light and fabric-softener dispenser, and pre-selectable temperature combinations limited to hot wash with warm rinse on regular cycle and to warm wash with cold rinse on wash-and-

wear cycle. Frequency-of-Repair record for brand, relatively poor.

SEARS KENMORE Cat. No. 51471 (Sears, Roebuck), \$219.95 plus shipping. Washing ability, somewhat better than that of most other models tested. Relatively small amount of linting. Tended to tangle clothes moderately to severely with larger loads. Has separate wash-and-wear cycle, shorter cycle for delicate fabrics, and prewash cycle; wash-and-wear cycle consumed 46½ gal. of water, of which 36½ were cold when warm wash with cold rinse was selected (see story). Somewhat less versatile than many other machines. Hot or warm wash with warm rinse available on normal cycle, hot or warm wash with cold rinse available on wash-and-wear cycle, but in both instances hot wash can only be preset with maximum or near maximum wash times; warm wash with shorter wash times only. Shorter cycle is limited to warm wash with warm rinse; prewash available only with cold water. No full cold wash cycle. Slow agitation and spin speeds available only with shorter cycle; wash-and-wear cycle has normal agitation with slow spin. Continuous range of presettable fill levels from "low" to "high." Has self-cleaning lint filter. Has liquid bleach dispenser. Projection over rear of tub made loading and unloading somewhat inconvenient. Buzzer sounds when unbalance switch operates. Safety switch stops machine if lid is opened during spin. Lid hinged at left side. Optional portability kit, *Cat. No. 1373*, \$11.50 plus shipping; includes handle to raise and lower casters, but handle is inconveniently located behind machine. *Cat. No. 51476*, \$229.95 plus shipping (not tested) appears similar but has all-porcelain-enamel finish. Frequency-of-Repair record for brand, average.

HAMILTON WA405 (Hamilton Mfg. Co., Two Rivers, Wis.). Washing ability, satisfactory. Poor in sand disposal; sand deposited on clothes in subsequent loads. Water extraction, somewhat below average. Has separate cycles for wash-and-wear and soak. Separate dial programs specific combinations of water temperature and speeds for various cycles. Hot wash with warm rinse available at normal speed only; warm wash with cold rinse at normal or slow agitation and spin speeds; hot wash with cold rinse at normal speeds or

SHOULD YOU AIM AT A COORDINATED LAUNDRY?

Most consumers buy their washers and dryers separately, but it would still be interesting to find out if there is particular advantage in buying a matching dryer and washer.

CU's price survey did indicate that some dealers might give a little break on the price if you were to buy a washer and a dryer of the same brand, but the saving isn't likely to be great. And if your laundry equipment is on display, so to speak, as it might be in the kitchen, two units of the same brand might to some people look pleasanter side by side, particularly if they prefer to have a special color. But, against these advantages, our test results argue rather strongly for selecting washer and dryer on the basis of what each can do and how well it can do it.

Since we chose the test models of both washers and dryers on the basis of the features they offered, we often did not get the models the manufacturers consider "pairs." Among the 16 brands that we tested, only five were manufacturer's pairs.

The brands involved were *Maytag*, *Philco*, *Hotpoint*, *Blackstone*, and *Easy*. From our test data, we estimated how long it would take each dryer to dry an 8-lb. cotton test load laundered in the matching washing machine. Our figure for the total of washing and drying time, for one load, ranged from 77 minutes (*Maytag*) to 94 minutes (*Hotpoint*).

But housewives who do several loads in succession may be more interested in knowing if the dryer would keep

pace with the washing machine, load for load. Only the relatively low-rated *Easys*, among matched pairs, would be likely to have the end of the two cycles coincide. Your wait for the dryer might be only 4 minutes with the *Hotpoint* pair, and might range up to a disconcerting 21 minutes with the *Philcos*.

We made a similar comparison for the brands where we did not have matching pairs (see table opposite) and found that brand mates which are not matched do no worse in general than matched pairs. Usually, the gas dryer may be expected to come closer than the electric one to matching the washer. Indeed, with the *RCA Whirlpool* washer and its gas dryer, you are likely to have a few minutes at your disposal in which to start folding dry clothes before the next washer load is ready.

Our estimates, of course, relate only to one particular load. A wash-and-wear load, say, would dry notably faster (though in some washers the wash-and-wear cycle is also faster). We suggest that the user of any washer and dryer do some experimenting to find the most efficient order for a series of loads. In most instances, we suspect, the whole job will be completed fastest if the slowest-drying load is washed last.

So what should you do if you are in the market for both washer and dryer now? In CU's opinion, the best choice is the *Maytag* washer and any of the check-rated dryers. The gas *RCA Whirlpool* was the only one of these that may be expected to cycle as fast (at least) as the *Maytag* washer.

with normal agitation and slow spin; warm wash and rinse at normal agitation and slow spin or at slow agitation and normal spin. Cold wash and rinse available with slow speeds only. For partial fill, user must wait and push button when water reaches desired level. Has liquid-bleach dispenser. Has combination lint filter and detergent dispenser, which must be removed to load and unload clothes—a minor inconvenience. No unbalance switch; only slight-to-moderate increase in vibration when load became unbalanced during spin. Safety switch stops machine if lid is opened during spin. Illuminated timer dial. Service access from front for many components.

FRIGIDAIRE WCDK (Frigidaire Div., General Motors Corp., Dayton, Ohio). Washing ability, satisfactory. Judged unable to take quite as large a load as most other machines tested. Poor in sand disposal; sand deposited on clothes in subsequent loads. Water extraction, somewhat better than average. Not as well protected against overflow of small items into outer tub as most other machines tested. Has separate soak cycle. Hot, warm, or cold wash with warm or cold rinse. Timed fill, but timer can be preset for less than maximum wash time. Has small-load setting, which uses less water and shortens all phases of cycle—a condition that may not always be desirable. Has detergent dispenser and liquid bleach or dye dispenser. Optional fabric-softener dispenser, \$2.75. CU's sample, representative of current production (which, according to manufacturer, can be identified by the letters "VD" in the serial number), had no unbalance switch; only slight-to-moderate increase in vibration when load became unbalanced during spin. With severely unbalanced loads, unit's mechanism gave off a rather strong odor (see story). Safety switch stops machine any time lid is opened. Lid hinged at left side. With optional portability kit (\$5.90), although two of the casters had brakes, machine tended to roll on casters when load became unbalanced during spin. *Model WCDPK* (not tested) appears similar but has all-porcelain-enamel finish. Frequency-of-Repair record for brand, average.

NORGE AWG-1220 (Norge Div., Borg-Warner Corp., Chicago). Washing ability, satisfactory. Judged unable to take quite as large a load as most other machines tested. Only fair in sand disposal; traces of sand deposited in clothes of subsequent load. Water extraction, somewhat better than average. Tended to tangle clothes moderately to severely with larger loads. Has separate, shorter cycle for delicate fabrics. Hot wash with warm or cold rinse, warm or cold wash with cold rinse. Has 3 preset wash-fill periods, but less than maximum wash time cannot be preset. Lint filter may have to be removed for convenience in loading and unloading—a slight inconvenience. Has unbalance switch, but reset button is located inconveniently close to floor. Safety switch stops machine if lid is opened during spin. Relatively noisy. Lid, finished in baked enamel, is hinged at left side. Service access from front for many components. Optional portability kit, \$10.95 if purchased with washer, \$15 if purchased later. Kit includes handle to raise and lower casters. Handle requires 5 to 6 in. of clear space at right side. *Model AWG-1210* (not tested) appears similar but speeds are limited to normal agitation and spin, and tub alone is finished in porcelain-enamel. Frequency-of-Repair record for brand, poorer than average.

SPEED QUEEN A-49 (Speed Queen Div., McGraw-Edison Co., Ripon, Wis.). Washing ability, satisfactory. Poor in sand disposal; sand deposited on clothes in subsequent loads, and sand in tub judged difficult to clean out. Has shorter cycle for delicate fabrics and separate soak cycle. When hot or warm wash is used, machine lacks inflow of cold water at end of wash period to cool clothes before the water is spun out, desirable for optimum laundering of wash-and-wear items. Hot, warm, or cold wash with warm or cold rinse. Timed fill; timer markings help in selection of level for wash fill, but if reduced washing time is desired, user must reset controls when fill is completed. Timer lacks markings for convenient setting of less than full wash time. Has combination lint filter and fabric-softener dispenser, which must be removed for convenient loading and unloading; judged somewhat inconvenient to remove and clean. No

WASHERS			DRYERS				
	Ratings position	Time for regular fabric cycle		Ratings position ^A	Drying time ^B	Time difference	Washing plus drying time
✓ MAYTAG A-606 □	1	34 min.	MAYTAG DE-606	6	43 min.	+9 min.	77 min.
GENERAL ELECTRIC WA-850B	2	45	GENERAL ELECTRIC DE-920B	6	42	-3	87
WESTINGHOUSE LAF-590	3	39	✓ WESTINGHOUSE DTF-200	2	43	+4	82
			✓ WESTINGHOUSE DGF-400	G3	41	+2	80
RCA WHIRLPOOL LPA 780	4	35	✓ RCA WHIRLPOOL LPE 992	3	43	+8	78
			✓ RCA WHIRLPOOL LPI 992-1	G1	27	-8	62
WARDS 6626	5	42	WARDS 7726	6	38	-4	80
PHILCO W-2F4 □	6	32	PHILCO DE-6F4	15	53	+21	85
SEARS 51471	7	33	SEARS 5893	CA □	49	+16	82
HAMILTON WA405	8	38	HAMILTON DE505	5	55	+17	93
FRIGIDAIRE WCDK	9	32	✓ FRIGIDAIRE DCIAK	1	39	+7	71
			✓ FRIGIDAIRE DCIAGK	G2	36	+4	68
			FRIGIDAIRE DCDFK	□	72	+40	104
NORGE AWG-1220	10	34	NORGE DEG-1550	6	41	+7	75
SPEED QUEEN A-49	11	32	SPEED QUEEN 120AF	4	41	+9	73
			SPEED QUEEN 150AF	G4	39	+7	71
HOTPOINT LW-680 □	12	45	HOTPOINT LB-675	12	49	+4	94
KELVINATOR W-728	13	31	KELVINATOR DE-1128	10	53	+22	84
BLACKSTONE BA-750 □	CA □	40	BLACKSTONE BE-700	14	52	+12	92
EASY WA-222 □	CA □	45	EASY DE-222	13	45	0	90
WIZARD 2634	CA □	44	WIZARD 2648	11	55	+11	99

^A Within electric-model Ratings, unless preceded by a G to indicate ranking in gas-model Ratings.
^B For 8-lb. cotton test load washed in corresponding washer.

□ With dryer at right, makes a matching pair.
 □ Conditionally Acceptable; see Ratings.
 □ Ventless electric model; rated separately.

AUTOMATIC WASHING MACHINE RATINGS continued

unbalance switch; some noise and heavy vibration when load became unbalanced during spin. No safety switch to stop machine if lid is opened during spin. At end of spin, tub took about 1/2 min. to come to a stop—a possible annoyance. Controls are illuminated by incandescent lamps, judged easy to replace. Lid hinged at left side. Service access from front for many components. With optional casters (\$3.25 each) machine tended to roll on casters when load became unbalanced during spin. *Model A-74F* (not tested) appears similar but has stainless steel tub and aluminum (instead of plastic) agitator. Frequency-of-Repair record for brand, average.

HOTPOINT LW-680 (Hotpoint Div., General Electric Co., Chicago). Washing ability, satisfactory. Low-sudsing detergents may be needed for some loads to avoid oversudsing. Relatively small amount of linting. Poor in sand disposal; sand deposited on clothes in subsequent loads, and sand in tub judged difficult to clean out. Hot wash with warm rinse, warm or cold wash with cold rinse. Speed selections also include slow agitation with normal spin and normal agitation with slow spin. Single relatively long cycle with long (8-min.) spin period, judged not very suitable for laundering some delicate and wash-and-wear items. Timed fill; in contrast to most timed-fill machines, can be preset to either of 2 wash times. Has four presettable wash and rinse fill periods. Also has button that user can push to stop fill at a desired level. Lint filter must be removed to load and unload clothes—a minor inconvenience. Many components of filtering system, built into agitator, may require occasional cleaning; judged inconvenient to disassemble and reassemble. Has liquid-bleach and fabric-softener dispensers. Has unbalance switch. No safety switch to stop machine if lid is opened during spin. At end of spin, tub took about 1 min. to come to a stop—a possible annoyance. Smooth control knobs judged slippery to grasp with wet hands. Lid hinged at left side. Entire cabinet finished in porcelain enamel. *Model LW-670* (not tested) appears similar but lacks fill-select pushbutton, and speed choices are limited to normal agitation with normal spin and slow agitation with slow spin. *Model LW-650* (not tested) appears similar but lacks a fill-select pushbutton, and its speeds are limited to normal agitation and spin. Frequency-of-Repair record for brand, slightly poorer than average.

KELVINATOR W-728 (Kelvinator Div., American Motors Corp., Detroit). Washing ability, satisfactory. Judged unable to take quite as large a load as most other machines tested. Low-sudsing detergents may be needed for some loads to prevent oversudsing. Poor in sand disposal; sand deposited on clothes in subsequent loads. Relatively small amount of linting. Rather severe tangling of clothes in 8-lb. and larger loads. Hot or warm wash with warm rinse; "medium" wash (between warm and hot, using about 9 additional gal. of cold water for wash-and-wear) and cold wash with cold rinse. Timed fill; timer cannot be preset for less than maximum wash time, nor can it conveniently be preset for less than full fill. Has separate small-load cycle, which uses less water and shortens cycle, which may not always be desirable. Has dispenser which can be set either to dispense liquid bleach during the wash period, or fabric softener during the rinse period. Judged relatively inconvenient to load and unload, even after removal of lint filter, because of narrow opening, large agitator, and rubber ring at neck of tub. Has unbalance switch. Safety switch stops machine any time lid is opened; even so, splashed some water out when lid was opened during wash or rinse. At end of spin, tub took about 3/4 min. to come to a stop—a possible annoyance. Relatively quiet. Timer judged relatively inconvenient to operate because of effort required to turn knob past starting points of cycles. Cleaning lint threads from the many agitator holes judged inconvenient. Service access from front for many components. *Model W-728P* (not tested) appears similar but has all-porcelain-enamel finish. *Model W-528* (not tested) appears similar but lacks bleach or fabric-softener dispenser and cold wash with cold rinse setting; in place of the presettable combination of warm wash with warm rinse, gives warm wash with cold rinse. *Model W-508* (not tested) appears to be

a single-speed version of *W-528*. Frequency-of-Repair record for brand, slightly poorer than average.

CONDITIONALLY ACCEPTABLE

BLACKSTONE BA-750 (Blackstone Corp., Jamestown, N.Y.). *Backsplash is grounded, but on CU's sample there was no electrical contact between backsplash and cabinet; to avoid a possible shock hazard if the motor or some other electrical component breaks down, steps should be taken to insure that the cabinet is properly grounded. This model is Acceptable on condition that a wire is attached either between a backsplash screw and one on the cabinet or as shown in photo on page 430. Except for this deficiency, would be ranked just after the Hamilton WA405, above.* Washing ability, satisfactory. Poor in sand disposal; sand deposited on clothes in subsequent loads. Has separate, shorter cycle for wash-and-wear and delicate fabrics. Separate pushbuttons program specific combinations of water temperatures and speeds. Hot wash with warm rinse available at normal speeds only; hot wash with cold rinse available at normal speeds or with normal agitation and slow spin; warm wash with cold rinse available at normal or slow speeds. Cold wash and rinse available only with normal agitation and slow spin. Timed fill; timer markings help in selection of level for wash fill, but if reduced washing time is desired, user must reset controls when fill is completed. At less than maximum fill, detergent must be placed in clothes tub. Has liquid-bleach dispenser. Has combination lint filter and detergent dispenser, which must be removed to load and unload clothes—a minor inconvenience. No unbalance switch, only moderate increase in vibration when load became unbalanced during spin. No safety switch to stop machine if lid is opened during spin. Stainless steel tub. Service access from front for many components.

EASY WA-222 (Easy Appliance Div., Hupp Corp., Cleveland, Ohio). *Replacing incandescent lamp that illuminates water temperature and partial fill pushbuttons requires disassembly which exposes terminals that are live if machine is not unplugged—a serious hazard. Since few users are likely to attempt a lamp replacement in this machine, the model is Acceptable on condition that a prominent, permanent label is affixed to it to remind user to unplug the machine before attempting lamp replacement. Except for this deficiency, would be ranked just after Kelvinator W-728, above.* Essentially similar to the Hotpoint LW-680, above, except for the following: Hot, warm, or cold wash with warm or cold rinse. Available speeds include only normal agitation with normal spin and slow agitation with slow spin. Lacks the 4 presettable fill periods, but does have a button that user can press when water reaches desired level. Timer may be preset for less than maximum wash fill but is not marked conveniently. Smooth timer knob judged slippery to grasp with wet hand. No dispensers.

WIZARD Cat. No. 2634 (Western Auto Supply Co., Kansas City, Mo.), \$198.88. *Failure to unplug machine before replacing incandescent lamps that illuminate timer exposes user to same hazard as described for the Easy WA-222, preceding; same condition for Acceptability applies. Except for this deficiency, would be ranked in last position among Acceptable models.* Washing ability, somewhat better than that of most other models tested. Judged to be able to take somewhat larger load than most other machines tested. Poor in sand disposal; sand deposited on clothes in subsequent loads. Relatively large amount of linting. Water extraction, poorest among machines tested. Has short cycle for delicate fabrics. Hot wash with cold rinse available at normal speeds or with normal agitation and slow spin; warm wash and rinse only with slow agitation and normal spin; cold wash and rinse for all speed combinations. What CU considers an optimum program for many wash-and-wear items cannot be preset; machine lacks combination of warm wash with cold rinse and, when hot wash is used, machine lacks inflow of cold water at end of wash to cool clothes before spin. For partial fill, user must push button when fill reaches desired level. Has combination lint filter and fabric-softener dispenser, the latter defective in CU's sample: emptied into tub during wash instead of rinse, but deficiency was easily corrected by smoothing edges of opening through which fluid flows. Buzzer sounds when unbalance switch operates. No safety switch to stop machine if lid is opened during spin. At end of spin, took about 1 min. to come to a stop—a possible annoyance. Lid hinged at left side; can be reversed to open from other side. Service access from front for many components.

SUPER 8/SINGLE 8 MOVIE PROJECTORS

OF THE FIVE CHECK-RATED MODELS, ONE PROJECTS BOTH THE OLD AND THE NEW 8mm FORMATS

Anyone now in the market for a home-movie projector should give serious consideration to a model designed for the new Super 8 or Single 8 film format, even if he is using an old double 8 camera. Some projectors, in fact, will accommodate both formats, converting from Super or Single 8 to double 8 film as needed. We have printed the names of such convertible models in color in our Ratings table on page 440.

A key advantage of the new Super 8/Single 8 format is that its larger frame area permits either a 50% brighter image or a 50% larger image than can be obtained from the old double 8 format. Both Super 8 and Single 8 systems also provide 50 feet, instead of double 8's 25 feet, of continuous shooting—though at somewhat less time per foot. For a fuller discussion of the new format, including an examination of the relative merits of the Super 8 and Single 8 systems, see our Ratings report on Super 8 cameras in CONSUMER REPORTS, June 1966.

Features and what they do for you

Our 22 projector test models ranged in list price from about \$63 to about \$220. About half are available with either a zoom or a fixed-focal-length lens. Where there was a choice, we tested with a zoom lens on models priced over \$150 and with a nonzoom lens on lower priced models; convertible models were tested with both lenses.

Projectors have not changed much in basic mechanisms since CU last tested them (CONSUMER REPORTS, May 1961). However, some of the features that were new at that time—automatic threading, lamps with built-in re-

flectors, zoom lenses—are run-of-the-mill now. All of the tested projectors have fully automatic threading. All but two have built-in reflector lamps, and film cutters for trimming the leader or the film end so that it will feed smoothly into the automatic threading mechanism.

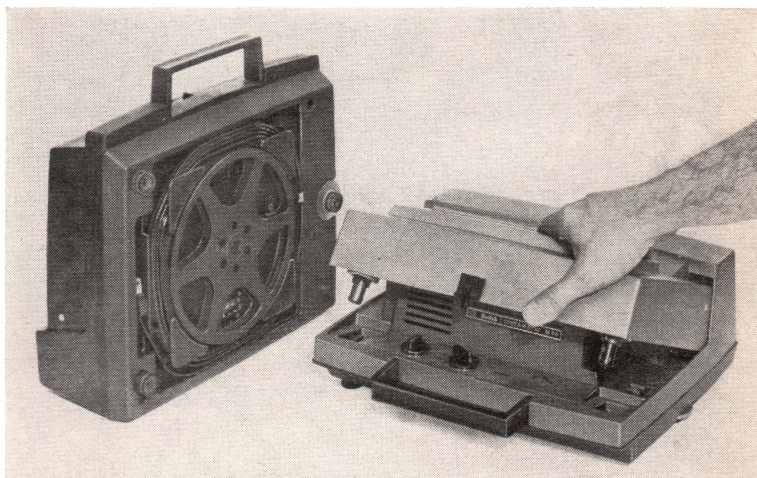
Automatic threading, of course, is a blessing, especially for the not-so-dexterous. You put the reels in place, insert the end of the leader in an opening, turn on the projector, and that's it. But the threading is less than 100% reliable; the film can jam, and occasionally did so during CU's tests. You should keep a wary eye on the threading process so that you can turn off the projector quickly and clear any jams before too much film gets tangled in the feed mechanism.

If you often use a projector in different locations, where the available projection distances vary considerably, a zoom lens will permit you to place the projector in the most convenient location—within its zoom limits—and still fill the screen to full width. Also, if you have a convertible projector and want to switch from a reel of the new-size film to one of the older double 8, the zoom lens takes care of adjusting for the different size of the projected image.

But this is about all a zoom lens will do for you; don't expect too much if you try to use it like a camera zoom lens. If you zoom in on some point of interest in your picture, the picture will not only spill off the screen edges, but will lose some brightness and also become less sharp. None of the zoom lenses in CU's tests fully retained their focus as they were zoomed. And except for the *Fujicascope*



The bulky Sears 9203 and compact Bauer illustrate the range of sizes found among models tested: all were easily carried



Locating reel spindles and related mechanism in the cover helps achieve one-piece compactness in Kodak M80 (and M70)

MOVIE PROJECTORS continued

M2, *DeJur Versatile*, and *Kodak M70*, all went far out of focus with any but the smallest change in focal length. However, the principal purpose of a zoom lens on a projector is to set up for projector-to-screen distance conveniently, and refocusing for that purpose is not particularly inconvenient.

The fixed-focal-length models have lenses ranging from 20mm for the *Keystone K-530M* to 28mm for the *Kodak M50* and *M80*. The shorter the focal length, the shorter the distance between projector and screen required to fill the screen. The line graph on the facing page shows distances required with various focal lengths to fill a 40-inch screen, and should be consulted before you buy a projector. The Ratings table gives these distances for all lenses tested. If the projector of your choice requires a greater distance from lens to screen than you have available, it may be possible to buy it with a lens of shorter focal length (see the notes under the Ratings table). You can determine the projection distance for the other lenses from the graph.

How the projectors performed

When you project your cherished pictures on the screen you expect them to be bright, sharp, and clear. You also hope to show your movies with a minimum of trouble, a maximum of reliability, and in at least reasonable quiet.

The tested projectors, as the Ratings show, varied considerably in their ability to meet this ideal. We tested for

sharpness by projecting a sharp, detailed color film to fill a 40-inch, fine matte screen. Most models would produce a good sharp image in the central area of the screen, but sharpness tended to deteriorate toward the edges. We judged overall sharpness as very good in only three models, *Wards 886*, *Sears 9203*, and *Kodak M80*. But individual samples may vary somewhat, so it is best to buy with an exchange privilege and check your purchase as soon as you can—or, if possible, try out your prospective purchase in the store.

We measured the brightness of the projected image photoelectrically, again filling a 40-inch screen with the light from an unloaded projector powered at a constant 117 volts. Zoom models were tested at a projector-to-screen distance of 14 feet. Relative brightness was judged to range from very good to only fair. Keep in mind that, while brightness may not be too important under ideal viewing conditions, it can make a big difference if you're showing a film in an incompletely darkened room. Uniformity of brightness over the picture area was judged satisfactory in all the tested models.

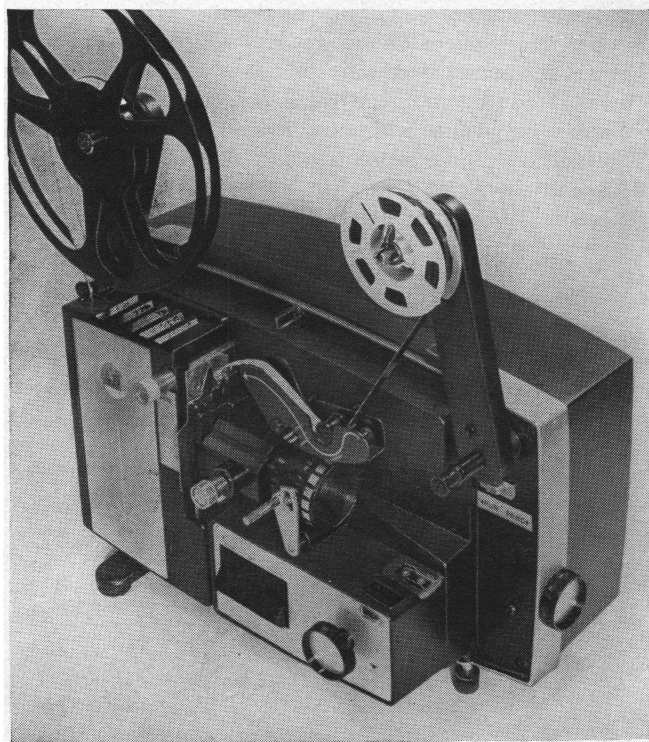
The mechanical performance of each projector was evaluated on the basis of judgments of image steadiness (freedom from picture jitter), of the smoothness, convenience, and ease of operating its controls, and of quietness. Our judgments of image steadiness ranged from very good to fair, but even those rated fair would probably be steady enough to satisfy all except the more critical viewers.

The tested models ranged from fair to good in meeting our criteria for controls. Those judged fair had a degree of roughness and inconvenience that might be objectionable to the mechanically aware user, but probably not to most others. We also judged the convenience of removing partly projected reels. If you choose one of the few projectors that don't allow you to remove film conveniently in mid-reel, you'll either have to rewind the film by reversing the projector, or run the film through with the lamp off. Either one of these procedures could be time-consuming.

A noisy projector can take much of the fun out of a showing. Six models were judged to operate at a comparatively high noise level; the others ranged from low to moderate. All the models were found free of shock hazard.

Speed-up, slow-down, and reverse

A desirable feature on 14 of the tested projectors is variable speed, allowing you to slow down or speed up the projection—or do both on some. This flexibility permits such effects as slowed motion or comic speed-up, or quicker transition through less important parts of a film. Most of the projectors having speeds other than the standard 18 frames per second accomplish the change mechanically, but the *DeJur Eldorado*, *Richmond Aurora*, *Honeywell Elmo Dual-8*, and *Fujicascope M2* use, instead, an electrical control that varies the speed of their drive motors. This we judged a somewhat less desirable method because it reduces the fan speed, and hence the cooling rate (though not to the point of film damage in any of the tested units). As noted in the Ratings, some models



The rollers used in the *DeJur Versatile* (and also in the *Kodaks* tested) performed as well as did the traditional sprocket drive used in all of the other projectors tested

have a fixed slow-motion speed setting as well as continuous speed control.

Variable speed is found mainly on the higher-priced models, but there are exceptions in both directions. The *Bauer T1-S*, one of the highest-priced test models, has only standard speed, while the *Richmond Aurora*, among the lower-priced, has variable speed.

With reverse projection you can not only produce comic effects but can back up and then rerun a scene without having to first rewind the entire film. All the test projectors, except the *Kodak M50* and the *GAF Anscovision*, could project in reverse.

Another feature of occasional convenience is still projection. With it, you can set up for your showing with a single frame, instead of having to run several feet of film and then reversing or rewinding. This feature also allows you to study a single frame for an extended period. All the test models, except the *Bolex 18-5*, *GAF Anscovision*, and *Kodak M50* have it.

A fast rewind speed is highly desirable; it can be exasperating to have to wait several minutes for film to rewind before you can change reels. The time required for rewinding 50 feet of film varied from 12 to 45 seconds.

All the projectors tested accept 7-inch reels, save for the *Kodak M50*, which can't accommodate reels any larger than 5 inches. The 7-inchers hold 400 feet of Super 8 film or 600 feet of the thinner Single 8. The *M50's* 5-inchers holds 200 feet of Super 8 or 300 feet of Single 8. In terms of projection time, the 7-inch reels permit a showing of about 40 minutes with Single 8 or 27 minutes with Super 8 film; the *Kodak M50's* reel will provide about half those times.

A feature of minor convenience is a socket on the projector into which you can plug a room lamp, which is then automatically switched off when the projector is switched on. Nine of our projectors have the socket, but two do not have automatic switching. Instead of a socket, the *Eumig* has its own automatically controlled, 3-watt "room" lamp.

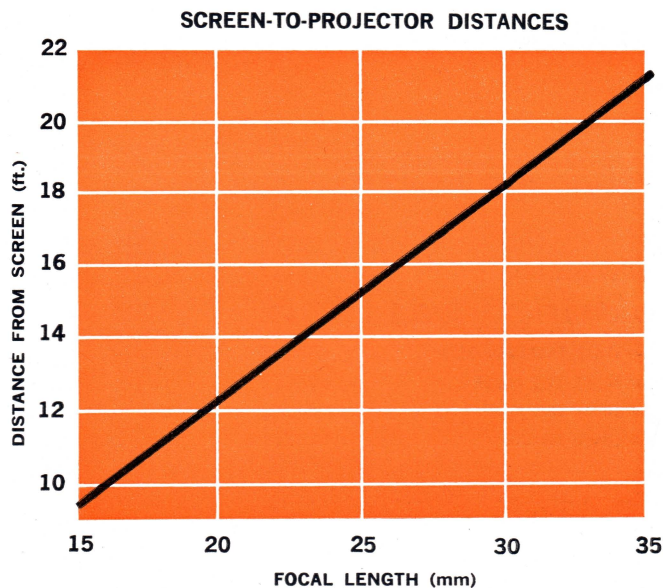
A projection-lamp dimmer, provided on some models, lets you show slightly overexposed film at a more comfortable level of illumination (see Ratings).

Two models are rigged—to a degree—for sound effects. The *Bauer T1-S* has a built-in unit for synchronizing sound from a tape recorder; the *Fujicascope M2* has a socket that accepts an accessory unit for the same purpose. Remember that this feature is *not* a device for recording sound on the film.

A projector doesn't need much maintenance, but the lens and film gate should be cleaned occasionally. With today's built-in reflector lamps, the lens is the only part of the optical system to clean; the film gate should be readily accessible, as it was on all our models. Lamp replacement on all models also was judged not overly difficult.

Before you enter a camera shop

As in buying a car, it's wiser to make a few decisions before you enter the salesroom. Select the features you would like to have, consult your budget, then decide how much you can get for what you want to spend. If you have bought a new Super 8 or Single 8 camera, and already own



If the screen-to-projector distance for a fixed-focal-length model, as given in the table on page 440, is greater than the distance you have available, it may be possible to buy the projector with a lens of shorter focal length. This chart shows screen-to-projector distances needed to fill a 40-inch screen, with lenses of focal lengths from 15 to 35mm

a double 8 projector, with a library of film to fit it, you are likely to make the most satisfactory deal all around by trading in your old projector on one of the convertible models. The alternative, keeping your old double 8 model and buying a new Super 8/Single 8 in addition, is likely to cost more and will also present you with the problem of storing both.

If your storage space is at a premium, check the dimensions given in the Ratings; there's a considerable range. If portability is important, check several models that look promising for the shape of the projector, its handle, and its provisions for storing cord and take-up reel. Heft the machine in the store. Of the tested models, the compact *Bolex* with its carrying case is one example of especially good portability.

With luck, you may find a dealer willing to give you a trial demonstration before you buy. If he does not have a Super 8 or Single 8 demonstration film, you may have to provide one. At any rate, you're making a substantial investment when you buy a movie projector, and CU believes the dealer ought to give you, if not a try-out, at least a return privilege should you be dissatisfied.

FOR CANADIAN READERS

We checked the Canadian counterparts of nine of the Super 8/Single 8 projectors covered in this report. They were generally closely similar to their corresponding U.S. models. The Canadian model numbers and prices (led off by a bold-faced "Canadian model" to catch your eye), plus notes on differences from U.S. models, are included in the Ratings comments. Turn the page for the Ratings table and comments.

RATINGS

OF SUPER 8/ SINGLE 8 MOVIE PROJECTORS

Within types, listed in order of estimated overall quality. Closely ranked models differed little in overall quality. Models printed in color also project double 8 film; projection distances will then be somewhat longer. All have fully automatic threading. Except as noted, all are for use only on 115-volt, 60-cycle

KEY: VG, VERY GOOD; G, GOOD; F, FAIR

Acceptable

ZOOM-LENS MODELS

	List price	STORAGE DIMENSIONS			Weight	Lens focal length	Projection distances to fill 40-in. screen	Image steadiness
		Height	Width	Length				
✓ SEARS EASI-LOAD 9203	\$158.50 [Ⓐ]	14½ in.	9½ in.	10½ in.	20½ lb.	19 to 32 mm	12 to 20 ft.	VG
✓ BAUER T1-S SUPER	179.95	8	5	10	12	18 to 30	11 to 19	VG
✓ BOLEX 18-5	179.50	8½	7	10½	18	17 to 28	11 to 17	VG
✓ EUMIG MARK-M	179.95	9½	5½	11	18	15 to 25	9 to 16	VG
HONEYWELL ELMO DUAL-8 FP8-C	199.50	13½	7	10	16	20 to 32	13 to 20	VG
BELL & HOWELL AUTOLOAD 482Z	169.95	10	8½	11	16	17 to 27	11 to 17	VG
DeJUR VERSATILE 1PT-90	219.95	8½	7½	14	19	15 to 25	9 to 16	F-to-G
KODAK INSTAMATIC M80	219.50	11½	5	12	15	20 to 32	13 to 20	G
KODAK INSTAMATIC M70	169.50	11½	5	12	14½	20 to 32	13 to 20	G
FUJICA SINGLE 8 FUJICASCOPE M2	162.50	9	6	12½	14½	19 to 32 [Ⓒ]	12 to 20	VG
KEYSTONE AUTO-INSTANT K-550Z	149.95	11	8½	10	15	18 to 30	11 to 19	G
WARDS 886	87.50 [Ⓐ]	12	8½	10	13	18 to 30	11 to 19	F-to-G
DeJUR ELDORADO I PT-80	159.95	8½	7½	13½	15½	14 to 24 [Ⓐ]	9 to 15	F

NONZOOM-LENS MODELS

✓ KODAK INSTAMATIC M80	199.50	11½	5	12	15	28	17	G
HONEYWELL ELMO DUAL-8 FP8-C	179.50	13½	7	10	16	25	16	VG
BELL & HOWELL AUTOLOAD 356	94.95	10	8½	11	15	25	16	G
SEARS EASI-LOAD 9220	73.50 [Ⓐ]	8½	6½	10½	11½	23	14	G
ARGUS SHOWMASTER 871	105.00	8½	6½	10½	11½	23	14	G
GAF ANSCOVISION 380	84.95	10½	6½	9½	11	25	16	G
KEYSTONE AUTO-INSTANT K-530M	99.95	12	8½	10	13½	20	13	G
KODAK INSTAMATIC M50	62.50	6½	6	9	6	28	17	F-to-G
RICHMOND AURORA II 660A	97.95	11½	7	9½	11	24	15	F

[Ⓐ] Standard speed is 18 frames per second (fps). When a range of speed is given, figures are as measured by CU. [Ⓐ] Plus shipping. [Ⓒ] Has socket

ZOOM-LENS MODELS

✓ SEARS EASI-LOAD Cat. No. 9203 (Sears, Roebuck). Price includes film splicing kit. Sears f/1.2 lens. Only model tested with cord that automatically retracts into projector body, judged convenient. Replacement lamp is Cat. No. 8640. Also available with f/1.2 nonzoom lens as 9202, \$138.50 plus shipping (not tested). **Canadian model** (Simpson-Sears Ltd., Toronto), \$189.95 including shipping, essentially similar to U.S. model; replacement lamp, \$9.35 plus shipping.

✓ BAUER T1-S SUPER (Allied Impex Corp., NYC). Bauer Vario f/1.3 lens. Separate lamp reflector. 2-position lamp-dimmer control. Built-in unit (not tested) for synchronizing film with separate sound-effect tape is usable only with noncartridge-type tape recorder with 3¼-ips running speed. No storage for cord or take-up reel.

✓ BOLEX 18-5 (Paillard, Inc., Linden, N.J.). Price includes leatherette zipper case and plastic case for take-up reel. Bolex f/1.3 lens. No still projection. Also available with f/1.3 nonzoom lens, \$149.50 (not tested). **Canadian model** (Garlick Films Ltd., Toronto), \$219.50 (case \$9.30 extra) essentially similar to U.S. model; replacement lamp, \$8.10.

✓ EUMIG MARK-M (Eumig USA, Inc., NYC). Eumig Austrovar f/1.3 lens. Separate lamp reflector. Has taps to permit use on a-c voltages from 110 to 250, at 50 or 60 cps. No film cutter. No storage space for cord or take-up reel. **Canadian model** (W. Carsen Co., Ltd., Don Mills, Ontario), \$169.95, essentially similar to U.S. model. Replacement lamp, \$8.95.

HONEYWELL ELMO DUAL-8 FP8-C (Honeywell, Inc., Denver). Elmo Projection f/1.3 lens. Would have been check-rated except for inconvenient mid-reel film removal.

BELL & HOWELL AUTOLOAD 482Z (Bell & Howell Co., Chicago). Bell & Howell f/1.6 lens. Would have been check-rated except for inconvenient mid-reel film removal. Also available with f/1.6 25mm nonzoom lens, \$149.95 (not tested). **Canadian model** (Bell & Howell Canada Ltd., Toronto), \$184.95, essentially similar to U.S. model; replacement lamp, \$9.30.

DeJUR VERSATILE 1PT-90 (DeJur-Amsco Corp., Long Island City, N.Y.). DeJur f/1.4 lens.

KODAK INSTAMATIC M80 (Eastman Kodak Co., Rochester, N.Y.). Kodak Projection f/1.5 lens. 2-position lamp dimmer control.

KODAK INSTAMATIC M70 (Eastman Kodak Co.). Kodak Projection f/1.5 lens. 2-position lamp dimmer control. Also available with Kodak Projection Ektanar f/1.5 28mm nonzoom lens, \$149.50; would be check-rated with this lens.

FUJICA SINGLE 8 FUJICASCOPE M2 (Fujica Div., Ehrenreich Photo Optical Industries, Inc., Garden City, N.Y.). Price includes vinyl cover. PSZ-Fujinon f/1.4, 25mm lens plus PSZ-Fujinon f/1.5 zoom converter lens; as a nonzoom model with lens converter removed, projection distance is 16 ft. and image brightness was judged good. Has sound-synchronization socket in projector for accessory synchronizing unit (Fujica Synabox 18, \$34.50; not tested) for synchronizing film with separate sound-effect tapes; usable only with

a-c; use lamps with built-in reflectors; have a film cutter for trimming the lead end prior to threading; were judged convenient to operate; have still and reverse projection controls and storage for cord and take-up reel; accept 400-ft. reels of Super 8 or 600-ft. reels of Single 8 film. Discounts are generally available.

Image bright- ness	Image sharp- ness	Mechan- ical per- formance	Projector speeds [Ⓐ]	Room-lamp socket with auto- matic switch	Mid-reel film removal	Rewind speed	Noise level	REPLACEMENT LAMPS	
								Rated life	List price
VG	VG	VG	7 to 26 fps	Yes	Convenient	Fast	High	15 hr.	\$5.96 [Ⓔ]
VG	G	VG	18	No	Convenient	Medium	Low	25	7.95
G	G	VG	5, 18	Yes	Convenient	Medium	Low	12	5.95
G	G	VG	18 to 24	No	Convenient	Medium	Low	12	7.80
G	G	VG	12 to 22	No	Inconvenient	Fast	Low	10	5.25
F-to-G	G	VG	6 to 22	No	Inconvenient	Fast	Low	15	6.25
G	G	VG	9 to 26	Yes	Inconvenient	Fast	Moderate	15	6.00
G	F	VG	6, 18, 54	No	Convenient	Medium	Moderate	12	5.95
G	F	VG	6, 18, 54	No	Convenient	Medium	Moderate	12	5.95
F-to-G	F	VG	16 to 26	No [Ⓒ]	Convenient	Very slow	Moderate	25	6.25
G	F-to-G	G	5 to 26	No [Ⓓ]	Very inconvenient	Medium	High	15	4.75
F-to-G	VG	G	18	No	Inconvenient	Slow	High	15	4.75 [Ⓔ]
F	F	VG	3 to 18	Yes	Inconvenient	Medium	Moderate	15	5.00
G	VG	VG	6, 18, 54	No	Convenient	Medium	Moderate	12	5.95
G	G	VG	12 to 22	No	Inconvenient	Medium	Low	10	5.25
G	F-to-G	VG	18	No	Inconvenient	Medium	Low	15	5.25
G	F	G	18	Yes	Convenient	Slow	Low	15	4.36 [Ⓔ]
G	F	G	18	Yes	Inconvenient	Slow	Low	12	5.95
F-to-G	G	F	18	No	Convenient	Fast	High	15	4.75
G	F-to-G	F	18	No	Inconvenient	Slow	High	15	4.75
F-to-G	G	G	18	No	Convenient	Fast	Moderate	15	5.25
F	F-to-G	F	9 to 20	Yes	Convenient	Fast	High	15	4.75

without switch. [Ⓓ] Has socket with manual switch. [Ⓔ] Focal length not specified; measured by CU. [Ⓕ] With zoom converter lens.

conventional tape recorder. Cord and take-up reel stored in vinyl projector cover.

KEYSTONE AUTO-INSTANT K-550Z (Keystone Camera Co., Inc., Boston). Keystone f/1.4 lens. **Canadian model** (Spencer & McMullen, Ltd., Toronto), \$199.95, essentially similar to U.S. model; replacement lamp, \$7.30.

WARDS Cat. No. 886 (Montgomery Ward). Auto Zoom f/1.4 lens.

DeJUR ELDORADO I PT-80 (DeJur Amsco). DeJur Amsco f/1.5 lens.

NONZOOM-LENS MODELS

KODAK INSTAMATIC M80 (Eastman Kodak Co.). Kodak Projection Ektanar f/1.5 lens. 2-position lamp dimmer control. **Canadian model** (Canadian Kodak Co., Ltd., Toronto), \$249.50, essentially similar to U.S. model; replacement lamp, \$8.25.

HONEYWELL ELMO DUAL-8 FP8-C (Honeywell, Inc.). Elmo Projection f/1.3 lens. Would have been check-rated except for inconvenient mid-reel film removal.

BELL & HOWELL AUTOLOAD 356 (Bell & Howell Co.). Bell & Howell Increlite f/1.6 lens. Would have been check-rated except for inconvenient mid-reel film removal. Also available with f/1.6 17- to 27mm Filmovara zoom lens as *Model 357Z*, \$114.95 (not tested). **Canadian model** (Bell & Howell Canada Ltd.), \$184.95, essentially similar to U.S. model; replacement lamp, \$9.30.

SEARS EASI-LOAD Cat. No. 9220 (Sears, Roebuck). Sears Cinepar f/1.5

lens. Replacement lamp is *Cat. No. 8723*. Also available with f/1.5 18.5 to 32mm zoom lens as *Cat. No. 9221*, \$83.50 plus shipping (not tested).

ARGUS SHOWMASTER 871 (Argus, Inc., Chicago). Argus f/1.5 lens. Essentially similar to *Sears 9220*, preceding, except for inconvenient mid-reel film removal. **Canadian model** (Argus Cameras of Canada Ltd., Newmarket, Ontario), \$119.95, essentially similar to U.S. model; replacement lamp, \$7.30.

GAF ANSCOVISION 380 (General Aniline & Film Corp., NYC). Unidentified f/1.5 lens. No still projection. No reverse.

KEYSTONE AUTO-INSTANT K-530M (Keystone Camera Co., Inc.). Keystone f/1.3 lens. Also available with f/1.4 18 to 30mm zoom lens, \$114.95 (not tested).

KODAK INSTAMATIC M50 (Eastman Kodak Co.). Unidentified f/1.5 lens. Rewind requires switching positions of reels on projector, judged inconvenient. Projection lamp remains on during rewind operation, judged undesirable. No still projection. No reverse. No film cutter. No carrying handle. Accepts only 200 ft. of Super 8 or 300 ft. of Single 8 film. No storage space for take-up reel. **Canadian model** (Canadian Kodak Co., Ltd.), \$79.50, essentially similar to U.S. model; replacement lamp, \$7.10.

RICHMOND AURORA II 660A (Richmond Research Corp., Richmond Hill, N.Y.). Unidentified f/1.5 lens. Also available with f/1.6 18 to 30mm zoom lens, \$104.95 (not tested).

ELECTRIC AND GAS CLOTHES DRYERS

MOST OF THE 21 MODELS HAVE AUTOMATIC CONTROLS TO TAKE GUESSWORK OUT OF YOUR WASHDAY

On the basis of previous experience, CU was convinced of the value of having automatic dryness controls on a clothes dryer. Such controls, whether they respond to a moisture-sensing device or to a combination of temperature and time, make it less likely you will be presented with a damp or grossly overdried load of laundry.

In buying dryers for test, therefore, we concentrated on models with an automatic dryness control, and made a point of including a few of the moisture-sensing type. One brand, *Easy*, doesn't offer any model with automatic-dryness controls, and we tested one with only a manual timer. Many of the other models tested have manual timers in addition to their automatic controls, for use when the appropriate automatic setting is not provided.

The brand coverage parallels that of the washing machine report on page 428. Each of the 16 washer brands is represented by an electric dryer—not always, however, the one that the manufacturer pairs with the washer tested. Since most people buy washers and dryers separately, we tried to select models within each appliance type with comparable features, and made no special attempt to get matching pairs. If you are in the market for both appliances at the

same time, however, refer to the discussion on page 434.

We concentrated on electric dryers, since they enjoy the larger sales. However, in addition to the 16 electric dryers, we tested the gas counterparts of the four that did best. Finally, we tested one electric dryer with a special feature some people may need—ventless operation; this model is discussed separately on page 444.

Most of the dryers performed quite well, on the whole, and three electric and three gas models merited check-rating. The automatic dryness controls generally did well with an 8-pound mixed test load including both light and heavy items, such as shirts, sheets, and towels. However, a number of the models did leave some heavy items damper than one might wish. The maker of at least one of these, the *Maytag*, holds that occasional dampness is preferable to overdrying. (Any *Maytag* owner who disagrees can have a serviceman make a minor adjustment; when we had this done, nothing was left objectionably damp.)

When the dryers were tested with a larger (12-pound) mixed load they still performed quite well. However, they did tend to leave damp areas on large items such as sheets, which rolled up or tangled at times.



Full-width doors and generous openings make the Norge (left) and the Wards easy to load. Fully open, the doors are out of the way; in other positions, they serve as shelves or (not shown) laundry chutes. Items that shouldn't be tumbled can be dried on racks, with the drum stationary

Most of the models have an automatic setting for damp-drying, useful if you iron clothes soon after drying. But at this setting, the *Kelvinator* and *Blackstone* left as many dry areas as damp ones. Worse still were the *Speed Queen* and *Hotpoint*, which produced clothes judged too dry for satisfactory ironing. The *Norge* and *Wards* make no provision for damp-drying nor were our testers able to manipulate the controls to produce damp-dry clothes. The *Wards*, however, has a built-in sprinkler that dampened an 8-pound load of dry clothes quite well in about half an hour.

The *Sears* and *RCA Whirlpools* also have provision for sprinkling clothes, a plastic ball that you can fill with water and tumble with the clothes to dampen them. This device did not perform as well, however, as the built-in sprinkler of the *Wards*. In the *Sears*, one may want to use the ball to supplement damp-drying, since this model (and the *Maytag*) left the clothes a little dryer than some people may desire for ironing. The *RCA Whirlpool*, on the other hand, was excellent at damp-drying; the only use for its ball would be to dampen previously dried clothes for ironing.

To compare the speed and cost of drying of the various machines, we dried in each one identical 8-pound cotton test loads, each of which had been washed and spun in a washer so that each had the same weight of water. The Table on page 446 gives the figures for each dryer, and the box below discusses relative operating costs of gas and electric models.

These figures should only be used for comparative purposes since drying times will vary with the size and com-

position of the load, how wet it comes from your washer, and so on. For example, if the load were washed in a washer with better water extraction, drying times would be reduced, perhaps by as much as eight minutes. By the same token, a load with such heavy items as towels and dungarees would require significantly more time.

Wash-and-wear loads

But speed isn't everything in a modern dryer. Temperature is more important for wash-and-wear fabrics—too low and wrinkles may not be removed, too high and new wrinkles may be produced. Most of the tested dryers were judged at least good at providing proper temperatures.

However, the temperatures reached at various settings in many dryers varied with the size of the load. You may therefore be able to improve results with wash-and-wear by experimenting beyond the manufacturers' instructions.

Each dryer tested provides a cool-off period, in which the clothes continue to tumble without heat. Thus, the clothes can be handled comfortably as soon as the dryer stops. Also, if the clothes are cool, wrinkles are less likely to form under the weight of the load. Some dryers did better than others in this respect, but with any of them it's better to remove any wash-and-wear load promptly.

All the dryers have a no-heat cycle for fluffing pillows or drying items, such as plastic and rubberized fabrics, that cannot take heat. On four models, the *Maytag*, the *Sears*, the *Philco*, and the *Wards*, the cycle is rather short. These machines may have to be put through a second no-heat cycle for complete drying of some articles. The check-rated

ELECTRIC vs. GAS DRYERS

About twice as many people buy electric clothes dryers as buy gas dryers. We suspect that the reason is not so much that gas models are priced somewhat higher than their electric counterparts, as that many homes in some parts of the country do not have gas lines.

It's true that gas models may have minor disadvantages that the electrics do not. Their automatic ignition systems can be fairly noisy (particularly on *Westinghouse* and *Speed Queen* among the tested models). And the ignition may interfere with TV reception; of the tested models, only the check-rated *RCA Whirlpool* didn't pose this problem.

But many consumers will find a gas dryer cheaper to operate than an electric one. CU's electrics handled our 8-pound cotton test load at a cost of 13¢ to 18½¢; the gas models did the same load for 2¢ to 2½¢, including about ½¢ for the electricity used by the motor, lights, and controls. We figured costs at rates representative of those many householders pay: 3¢ per kwh for electricity and 9.4¢ per 100 cubic feet of natural gas with a

heat content of 1055 Btu per cubic foot. On this basis it would cost you \$3.38 to dry 26 loads a month with the least power-hungry electric dryer tested, or a tidy \$40.56 a year. The most fuel-hungry of the gas dryers tested would do the same job for only 65¢ a month, \$7.80 a year—one-fifth the cost of the electrics.

However, utility rates vary widely from place to place, so you may have to make some calculations on your own; local utility companies will tell you what your local rates are.

Too, there may be installation expenses to reckon with. An electric dryer requires its own 120/240-volt circuit. A gas dryer, of course, must be hooked up to the gas line with its own plumbing and it needs a regular a-c outlet for its motor, lights, and controls.

If you don't have proper gas or electric hookups where you plan to put the dryer, installation could be expensive. You'd be wise to get estimates from both a plumber and an electrician if you are undecided between gas and electricity.

Both gas and electric dryers ordinarily

need some ductwork to vent the dryer's moist, heat-laden exhaust to the outdoors. Otherwise the room where your dryer is installed would rival a Turkish bath whenever you used it to dry your laundry. Duct-work, too, may add to installation costs. If your dryer is to be near a window, you can minimize this expense by replacing a window pane with an aluminum or a clear plastic plate with a hole already in it to receive the duct (but then the window may have to stay permanently closed). Otherwise, the vent probably will have to go through a wall. A handy do-it-yourselfer can probably make such an installation satisfactorily by following manufacturer's recommendations; other people may have to pay a professional to do the work.

It is just as important to ground permanently a gas dryer as an electric one, to eliminate shock hazard. (Grounding is discussed in more detail in the 1966 Buying Guide Issue, page 87.) All CU's gas models come with grounding-type plugs that can make grounding these units no problem at all.

CLOTHES DRYERS continued

*Frigidaire*s have a short no-heat cycle for fluffing, but when something wet is put in, they continue to blow unheated air until the load reaches the dryness selected.

The *Norge* and *Wards* have special provision for woollens and other fabrics that should not be tumbled. The drum stays stationary while heated or unheated air flows through the wet items placed on a rack in the drum.

Convenience factors

As CU's engineers checked performance, they kept an eye out for features that might simplify washday. A panel also evaluated convenience. Among the observations:

CONTROLS. On some dryers the temperature is determined by setting the automatic dryness control; on others, you have to manipulate an additional button or knob. There are redundant buttons on certain dryers. For instance, the *Blackstone* has five temperature buttons, plus one for no-heat, yet the five buttons give you a choice between only two hot-air temperatures. These buttons are, however, keyed by number to the positions of the automatic dryness control, a possible convenience in setting the latter. Button duplication is also to be found on the *Wizard*.

The controls on the check-rated *Frigidaire*s were judged easiest to use, but even here there was a slight drawback: the moisture-sensing automatic dryness control gives you no indication of how much time is left in a drying cycle. The *Maytag* and *Sears* share this minor deficiency. In the *Hamilton*, the only other dryer to use moisture-sensing, the load-size dial moves during the latter part of a cycle.

The two check-rated *Frigidaire*s, the *Maytag*, and the *Sears* have no manual timer—a minor disadvantage, since in our opinion their automatic dryness controls can handle almost anything you'd want to dry in them.

LOADING AND UNLOADING. The *Norge* and *Wards* are particularly convenient in both these operations. Each has a three-position, full-width door that can be used either as a loading chute or as a shelf, or can hang straight down out of the way. In both washers, the drum opening is relatively large, too. The full-width door of the *Sears* can be used only as a shelf.

The *Wizard*, in contrast, was judged rather awkward to load and unload. Its opening was among the smallest (only *Blackstone*'s was smaller); the door opens only to a little more than 90° to the right and, on CU's sample, its catch wouldn't open without a hard tug.

Instead of having a handle for opening their doors, *General Electric*, *Hotpoint*, and *Blackstone* are opened with a pedal. This is handy when your arms are full, but it would be nicer yet if they had a handle as well for times when the pedal is blocked, by a laundry basket, say.

LINT FILTERS. You will probably find that filters in the countertop, in the door, or near the drum opening are easiest to get at for cleaning. Least accessible was the filter inside the *Maytag*'s drum and the ones on the *Norge*, *Wards*, and *Philco*, tucked behind inconvenient-to-open panels near the floor. The *Hamilton*'s is near the floor, too, but not behind a panel. Once removed, all filters except *Wizard*'s and *Philco*'s are fairly easy to clean.

Lint build-up in inaccessible spots within a dryer may require a call to a serviceman. In the *Hamilton*, two access holes in the drum let you clean out at least some of this lint with a brush provided with the machine.

ILLUMINATION. Most of the dryers have lights in the drum to help you find errant items, and backsplash illumination as well. In only a few can the drum light be replaced conveniently. With the rest, you have to remove either the back panel or the top of the dryer. Some backsplash lamps also can be replaced from the front, but in one instance this may be hazardous. The *Sears* is rated Conditionally

A VENTLESS DRYER

The sultry air that a dryer expels should ordinarily be vented to the outdoors. But not everyone can conveniently run a vent through a window or wall.

We tested one electric dryer designed to get around such problems. The *Frigidaire DCDFK* needs no venting at all, because it is designed to recirculate the same air constantly. After the hot air passes over the wet clothes, it goes through a condenser that removes the moisture; the air is then reheated and circulated back into the drum.

A second flow of air is drawn in from the room to cool the condenser, and is blown out again. For fast condensation, the cooling air must be as far apart in temperature from the drying air as is practicable. Drying temperatures in this unit, therefore, are higher than in the vented models; at the same temperature, drying time would be enormously long.

However, the drying temperature can't be too high, lest it damage your wash and make the air blown into the room unacceptably warm.

The ventless *Frigidaire*'s compromise results in a dryer that's much slower than any vented model tested, despite its rather high operating temperature. It is also the most expensive to run.

Moisture removed by the condenser is collected in a removable pan at the bottom of the dryer. But only half the water extracted from the laundry was condensed into this pan; the rest was presumably dispersed into the room. This vapor, with the heat a dryer gives off, could make a room uncomfortable.

Further, the condenser has to be removed for cleaning from two to five times a year. While this task was judged not too difficult, fitting the condenser back into its slots was troublesome.

After every couple of loads, the condensing pan must be emptied. Though the pan is almost completely covered, water can slosh out. You can save yourself this chore, if you have a handy drain, by having a hole cut at the back of the pan and connecting a half-inch hose through which the water can run off. Alternatively, you can hook up to the drain hose of your washer a siphon system that will empty the pan as the washer discharges drain water.

All things considered, CU would advise against buying this model just to save the expense or bother of installing a vent. The check-rated *Frigidaire DCIAK*, which averaged only about \$12 more in CU's price survey, is vastly superior. Detailed information on the *DCDFK*, for those who really need the ventless feature, can be found in the Table and Ratings.

Acceptable because this chore may expose you to a shock hazard unless the cord is first unplugged (see Ratings).

END-OF-CYCLE INDICATIONS. Some sort of sign that the dryer is stopped is particularly useful for prompt removal of wash-and-wear loads. The best indication is given by the *Sears*, followed closely by the *Kelvinator*. Both have a buzzer that can be varied from off to very loud. The *Sears* also gives visual indication: the fluorescent light on its backslash goes off. Other indicators range from a loud bell to a light on the backslash. Seven dryers give no sign.

Besides cleaning the lint filter after each load and vacuuming lint from around the filter and drum openings

once in a while, you should clean out lint accumulations in the vent piping perhaps once a year to keep the dryer efficient and to avert a fire hazard.

All the dryers have safety thermostats that cut off the heaters before the drum temperatures can go high enough to cause a fire if the control thermostat fails. Gas models have a device that cuts off gas flow if the flame goes out.

Some models have a safety start switch. While all the dryers stop when you open the door, some start up again as soon as the door is closed. Those with a safety switch won't start again until it is pressed, a safeguard against a small child's being trapped in a functioning dryer.

RATINGS OF AUTOMATIC CLOTHES DRYERS

Within types, listed in order of estimated overall quality, except as noted, on the basis of laboratory tests, engineering evaluations, and judgments of convenience. Closely ranked models differed little in overall quality. The Ratings comment mainly on features and characteristics that were judged of special interest or to have deviated significantly from the average. For more data on features and performance, see Table on page 446. Except for the mail-order brands, there are no manufacturer's list prices; but see survey, page 448.

¶ Each model has a no-heat fluffing cycle. Unless otherwise indicated, control settings were provided for automatic drying of cotton, delicate-fabric, and wash-and-wear loads. Except as noted, control settings recommended by manufacturer gave temperatures judged suitable for cotton and delicate fabrics. Wash-and-wear performance judgments are based on temperatures reached at manufacturer's recommended setting for such loads; where better conditions could be obtained by experimentation, the settings are noted in parentheses. Except as noted, each model has a drum light, an illuminated or partly illuminated backslash, and a porcelain enamel counter top.

VENTED ELECTRIC MODELS

¶ All models are intended for operation on a 120/240-volt, 3-wire a-c circuit wired and fused for 30 amperes.

ACCEPTABLE

✓ **FRIGIDAIRE DCIAK** (Frigidaire Div., General Motors Corp., Dayton, Ohio). Wash-and-wear performance: good with small loads (very good at "regular" setting), excellent with large loads. Air fluff, only 10 min. (but see story). Drum light judged to provide relatively poor illumination. *Model DCIK* (not tested) appears to be essentially similar, except has all-porcelain cabinet and built-in sprinkler.

✓ **WESTINGHOUSE DTF-200** (Westinghouse Electric Corp., Mansfield, Ohio). No automatic dryness control setting for delicate or wash-and-wear load; manufacturer recommends timed setting. Wash-and-wear performance: very good with small loads; good with large loads. CU would expect excellent performance with some intermediate-sized loads. Drum light can be turned off with door open; light accessible for replacement from front of dryer.

✓ **RCA WHIRLPOOL LPE 992** (Whirlpool Corp., Benton Harbor, Mich.). Wash-and-wear performance: very good (excellent at "high" setting). Lint filter judged especially convenient. Comes with sprinkler ball. *Model LPE 890* (not tested) appears essentially similar, except for baked-enamel top and lack of sprinkler ball.

SPEED QUEEN 120AF (Speed Queen Div., McGraw-Edison Co., Ripon, Wis.). Wash-and-wear performance: at "normal" setting (recommended by manufacturer for "light wash-and-wear fabrics"), very good with small loads; fair with large loads (good at "delicate" setting). CU would expect excellent performance with some intermediate-sized loads at "normal" setting. Automatic damp-drying cycle left clothes too dry. *Model 120A* (not tested) appears essentially similar, except drum is zinc-coated rather than stainless steel.

HAMILTON DE505 (Hamilton Mfg. Co., Two Rivers, Wis.). Relatively slow. Wash-and-wear performance: excellent. Cool-off period at end of timed or "automatic" drying cycle left laundry relatively warm at "delicate" setting and uncomfortably warm to handle at higher heat settings. At maximum automatic dryness control setting, was unable to fully dry a 12-lb. mixed load. One of quietest dryers tested. Zinc-coated steel drum has openings to help in cleaning out lint accumulations.

¶ The following models were judged about equal in overall quality. Listed alphabetically.

GENERAL ELECTRIC DE-920B (General Electric Co., Louisville, Ky.). No automatic dryness control setting for wash-and-wear loads; manufacturer recommends timed setting. Delicate fabric temperature relatively high with 4-lb. load but satisfactory with smaller loads. Wash-and-wear performance: excellent with small loads; poor with large loads (fair at automatic "delicate" setting). Lamps for drum and backslash, accessible from front of dryer, easiest to replace of all models tested. Foot pedal to open door.

MAYTAG DE-606 (Maytag Co., Newton, Iowa). Wash-and-wear performance: excellent. Air fluff, only 10 min. No drum light or backslash light (except for small indicator lamp). One of quietest dryers tested. Lint filter, inside drum, judged inconvenient. Can be adjusted by serviceman to give drier loads if preferred (see story). *Models DE-806 and DE-906* (not tested) appear essentially similar, except have drum light, backslash light and, on *DE-906*, pushbutton controls instead of rotary control.

NORGE DEG-1550 (Norge Div., Borg-Warner Corp., Chicago). Wash-and-wear performance: good. At maximum automatic dryness control setting, was unable to fully dry 8-lb. or 12-lb. mixed load. No setting for automatic damp-drying. Drum light accessible for replacement from front of dryer. Dry-without-tumble cycle (see story). Judged

TABLE OF SPECIFICATIONS AND PERFORMANCE FOR DRYERS

	Height to top of backsplash [Ⓐ]	Width	OVERALL DEPTH [Ⓑ]		Direction door opens	Locations on cabinet for outdoor venting	Maximum timed cycle	Auto- matic cycle	End-of- cycle indication
			Door closed	Door open					
VENTED ELECTRIC MODELS									
ACCEPTABLE									
✓ FRIGIDAIRE DCIAK	44½ in.	27 in.	26½ in.	44 in.	Right	Rear, right, bottom	None	Yes ☒	Buzzer
✓ WESTINGHOUSE DTF-200	42¾	27	25¾	47	Right	Rear, right, left, bottom	180 min.	Yes	Bell
✓ RCA WHIRLPOOL LPE 992	43¾	29	26	41	Right	Rear	90	Yes	Light ☐
SPEED QUEEN 120AF	42½	30	29	44¾	Right	Rear, right, left, bottom	60	Yes	Light
HAMILTON DE505	43½	31¾	28¾	48	Right	Rear, right	60	Yes ☒	Light ☐
GENERAL ELECTRIC DE-920B	44¾	27	25	50¾	Right	Rear, right, left, bottom	45	Yes	Light
MAYTAG DE-606	43¾	28½	28	42½	Left	Rear, right, left	None	Yes ☒	Bell & light
NORGE DEG-1550	44¾	31	27	44	Down	Rear, right, left, bottom	105	Yes	None
WARDS SIGNATURE 7726	43	31	27	44	Down	Rear, right, left, bottom	70	Yes	None
KELVINATOR DE-1128	43½	27	29½	55	Right	Rear, right, left	60	Yes	Adjustable buzzer
WIZARD 2648	45	28	28	43¾	Right	Rear, right	100	Yes	None
HOTPOINT LB-675	45½	31	28½	45¾	Right	Rear, right, bottom	85	Yes	None
EASY DE-222	43¾	31	29	45¾	Right	Rear, right, bottom	130	No	Light
BLACKSTONE BE-700	43	26	28	43¾	Right	Rear, right, left	130	Yes	None
PHILCO DE-6F4	43	26¾	27¾	42	Left	Rear, right, bottom	90	Yes	None ☐
CONDITIONALLY ACCEPTABLE									
SEARS KENMORE 5893	43	29	26	42	Down ☐	Rear	None	Yes ☒	Adjustable buzzer & light

VENTLESS ELECTRIC MODEL

ACCEPTABLE

FRIGIDAIRE DCDFK	43½	27	26½	44	Right	None required	75	Yes	None
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VENTED GAS MODELS

ACCEPTABLE

✓ RCA WHIRLPOOL LPI 992-1	43¾	29	26	41	Right	Rear	90	Yes	Light
✓ FRIGIDAIRE DCIAGK	44½	27	26½	44	Right	Rear, right, bottom	None	Yes ☒	Buzzer
✓ WESTINGHOUSE DGF-400	42¾	27	25¾	47	Right	Rear, right, left, bottom	130	Yes	Bell
SPEED QUEEN 150AF	42½	30	29	44¾	Right	Rear, right, left, bottom	60	Yes	Light

[Ⓐ] All dimensions to nearest ¼ in.; adjustment of leveling legs can add up to 1½ in. to height.

[Ⓑ] Additional clearance of up to 7 in. at back may be needed for utility connections and venting. Door-open dimensions include any additional space needed for removal of lint filter.

[Ⓒ] See discussion on page 443 for utility rates used to compute costs.

[Ⓓ] Not including judgments on wash-and-wear (covered in the Ratings). Damp-dry judgments are for an 8-lb. load of items normally needing ironing; full-dry data are first for an 8-lb. and then for a 12-lb. mixed load of heavy and light items.

CLOTHES DRYER RATINGS continued

relatively convenient to load and unload. Lint filter, close to floor behind access panel, judged inconvenient.

WARDS SIGNATURE Cat. No. 7726 (Montgomery Ward). \$179.95 plus shipping. Wash-and-wear performance: good with small loads; very good with large loads. At maximum automatic dryness control setting, was unable to fully dry 8-lb. mixed load. No setting for automatic damp-drying but built-in sprinkler dampened dry clothes well. Has dry-without-tumble cycle (see story). Drum light accessible from front of dryer. Judged relatively convenient to load. Lint filter, close to floor behind access panel, judged inconvenient.

¶ The following models were judged somewhat lower in overall quality than those preceding.

KELVINATOR DE-1128 (Kelvinator Div., American Motors Corp., De-

troit). No automatic dryness control setting for delicate loads; manufacturer recommends timed setting. Wash-and-wear performance: poor with small loads (very good at timed "delicate" setting); very good with large loads. Automatic damp-drying cycle left clothes dry in some areas, damp in others.

WIZARD Cat. No. 2648 (Western Auto Supply Co., Kansas City, Mo.). \$164.95. Wash-and-wear performance: very good (excellent at "cotton" setting). One of noisiest dryers tested. Judged most inconvenient of the test models to load and unload, and one of the most expensive to run.

HOTPOINT LB-675 (Hotpoint Div., General Electric Co., Chicago). Wash-and-wear performance: very good with small loads; excellent with large loads. At maximum automatic dryness control setting, was unable to fully dry 8-lb. mixed load when set for automatic drying. Automatic damp-drying cycle left clothes too dry. No drum light or backslash light. One of noisiest dryers tested. Foot pedal to open

Drum	Safety start switch	8-LB. TEST LOAD 		AUTOMATIC DRYING  	
		Time	Cost	Damp-dry	Full-dry
Porcelain	Yes	47 min.	13½¢	E	E, E
Porcelain	No	48	13½	E	E, E
Baked enamel	Yes	49	14½	E	E, E
Stainless steel	Yes	45	13½	P	E, E
Zinc-coated steel	No	58	14½	E	E, G
Porcelain	Yes	47	13½	E	E, VG
Porcelain	Yes	49	13	VG	VG, VG 
Baked enamel	No	45	13½		G, G
Baked enamel	No	45	13½		G, VG
Porcelain	No	56	13½	F	E, VG
Baked enamel	No	56	16½	E	E, VG
Porcelain	Yes	55	13½	P	G, VG
Porcelain	Yes	52	13	Timed drying only	
Baked enamel	No	58	14½	F	E, VG
Porcelain	No	58	14½	E	E, VG
Baked enamel	Yes	51	15	G	VG, G
Porcelain	No	84	18½	P	E, E
Baked enamel	Yes	31	2½	E	E, VG
Porcelain	Yes	42	2	E	E, E
Porcelain	No	46	2	E	E, E
Stainless steel	Yes	43	2	P	E, E

 Moisture-sensing type.

 Has window in door.

 After a minor control modification; see story.

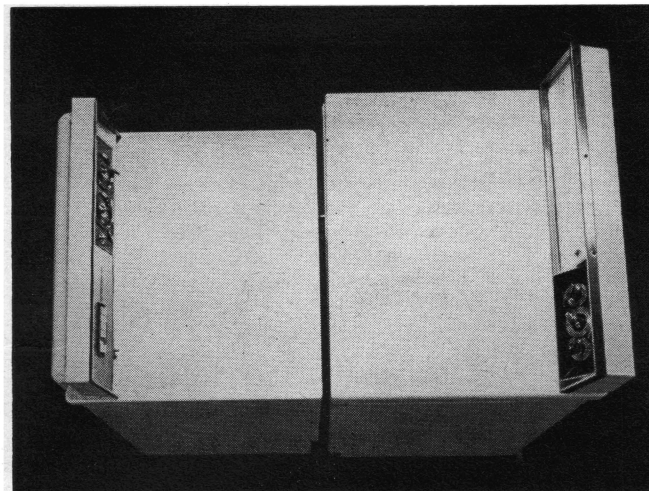
 Automatic damp-drying not claimed (but Wards has built-in sprinkler; see Rating).

door. Servicing judged somewhat inconvenient, because wiring and drum support are attached to back panel.

EASY DE-222 (Easy Appliance Div., Hupp Corp., Cleveland, Ohio). No automatic dryness control. Wash-and-wear performance: good with small loads; poor with large loads (good at "low" setting). CU would expect excellent performance with some intermediate-sized load, at manufacturer's recommended "normal" setting. No drum light. One of noisiest dryers tested. Servicing judged somewhat inconvenient because wiring and drum support are attached to back panel. *Model DE-210* (not tested) appears essentially similar, except for arrangement of pushbuttons and omission of air fluff operation and light for pushbuttons.

BLACKSTONE BE-700 (Blackstone Corp., Jamestown, N.Y.). Relatively slow. Wash-and-wear performance: fair (good with small loads and excellent with large loads at "regular" setting). Automatic damp-drying cycle left clothes dry in some areas, damp in others. No

Continued on page 448



An overhead view shows a sharp size difference between the check-rated Westinghouse DTF-200 (left) and the Hamilton



The ventless Frigidaire DCDFK collected water condensate in a covered pan; it was not easy to empty without spilling



The lint filters of the two RCA Whirlpools (and the Sears) were easy to get at for the needed cleaning after each load

CLOTHES DRYER RATINGS

continued

backsplash light. Baked-enamel top, judged less durable than porcelain enamel. Foot pedal to open door.

PHILCO DE-6F4 (Philco Corp., Philadelphia). Relatively slow. Wash-and-wear performance: fair with small loads (good at "regular" setting); good with large loads. Drum light judged to provide relatively poor illumination. Baked-enamel top, judged less durable than porcelain enamel, became uncomfortably warm on "extra heavy" setting. Lint filter, located close to the floor behind an access panel, judged inconvenient.

CONDITIONALLY ACCEPTABLE

SEARS KENMORE Cat. No. 5893 (Sears Roebuck). \$179.95 plus shipping. *Replacing fluorescent lamp that illuminates backsplash requires disassembly which exposes terminals that are live if machine is not unplugged—a serious hazard. Since few users are likely to attempt a lamp replacement in this machine, the model is Acceptable on condition that a prominent, permanent label is affixed to it to remind user to unplug the machine before attempting lamp replacement. Except for this deficiency would have ranked just before the Kelvinator DE-1128, above.* Wash-and-wear performance: very good. Cool-off period at end of cycle left clothes relatively warm. At maximum setting of automatic dryness control, was unable to fully dry 12-lb. mixed load. Damp-drying left somewhat less moisture than some people might prefer. Air fluff only 15 min. Lint filter judged especially convenient. Most effective end-of-cycle indication among models tested. Comes with sprinkler ball. This model is not listed in the current Fall-Winter catalog, but it may still be available in some Sears, Roebuck stores.

VENTLESS ELECTRIC MODEL

ACCEPTABLE

FRIGIDAIRE DCDFK (Frigidaire Div., General Motors Corp.). Cotton and delicate drying temperatures relatively high. Very slow. Wash-and-wear performance: excellent with small loads; poor with large loads (fair at "delicate" setting). CU would expect excellent performance with some intermediate-sized loads at the "delicate" setting. Damp-dry cycle with automatic dryness control left clothes too dry. No backsplash light; drum light judged to provide rela-

tively poor illumination. Baked-enamel top, judged less durable than porcelain enamel, became uncomfortably warm on "Regular" setting.

VENTED GAS MODELS

¶ *All models require a 3/8-in. or 1/2-in. gas supply line, (but check manufacturer's instructions and local plumbing code), plus a 120-volt a-c circuit. Each has automatic ignition and a 3-wire electric cord with a grounding plug. Results of CU's tests with natural gas should be applicable with other types of gas if burner is properly adapted.*

ACCEPTABLE

✓ **RCA WHIRLPOOL LPI 992-1** (Whirlpool Corp.). Wash-and-wear performance: excellent with small loads; good with large loads (very good at "delicate" setting with blower on "super"). Lint filter judged especially convenient. Comes with sprinkler ball. *Model LPI 890-1* (not tested) appears essentially similar, except for baked-enamel top and lack of sprinkler ball.

✓ **FRIGIDAIRE DCIAGK** (Frigidaire Div., General Motors Corp.). Essentially similar to electric *Frigidaire DCIAK*, above, except for faster drying speed. All other comments apply. *Model DCIGK* (not tested) appears essentially similar, except has all-porcelain cabinet and built-in sprinkler.

✓ **WESTINGHOUSE DGF-400** (Westinghouse Electric Corp.). No automatic dryness control for delicate or wash-and-wear load; manufacturer recommends timed setting. Wash-and-wear performance: very good with small loads; excellent with large loads.

SPEED QUEEN 150AF (Speed Queen Div., McGraw-Edison Co.). Essentially similar to electric *Speed Queen 120AF*, above, except for slightly faster drying speed. All other comments apply. *Model 150A* (not tested) appears essentially similar, except drum is zinc-coated.

OTHER GAS DRYERS

Since many electric dryers have a counterpart gas model, CU's Ratings for the electrics may be of some use in buying a gas model not tested in this project. The following gas models are probably very similar in performance, except for somewhat shorter drying time, to the rated electrics of the same brand: *Hamilton DS505*, *Wards 8726*, *Maytag DG-606* (ignition not automatic), *Blackstone BG-700*.

PRICE SURVEY: FINDING YOUR BEST BUY IN DRYERS

As is true of many other heavy appliances, firm prices on dryers are almost nonexistent. CU shoppers found differences of as much as \$119 in quoted prices for the same electric model, and price spreads of more than \$80 were not uncommon in our 20-city survey. Although price ranges weren't as broad, the general picture for the small number of gas dryers we checked was similar.

The survey disclosed no geographic or other price pattern, and hard-nosed bargaining might well earn you a lower price than the averages we quote here.

ELECTRIC MODELS	Range	Average
FRIGIDAIRE DCIAK	\$199.00-\$300.00	\$234.24
WESTINGHOUSE DTF-200	189.00- 279.00	235.92
RCA WHIRLPOOL LPE 992	149.95- 269.00	214.67
SPEED QUEEN 120AF	139.50- 209.95	172.63
HAMILTON DE505	190.00- 252.95	217.24

	Range	Average
GENERAL ELECTRIC DE-920B	\$180.00-\$269.95	\$214.73
MAYTAG DE-606	184.00- 260.00	206.98
NORGE DEG-1550	138.88- 229.95	186.68
WARDS SIGNATURE 7726	159.95- 199.00	184.19
KELVINATOR DE-1128	160.00- 249.95	207.97
WIZARD 2648	138.88- 179.95	167.08
HOTPOINT LB-675	149.00- 239.95	178.79
EASY DE-222	130.00- 190.00	159.90
BLACKSTONE BE-700	154.95- 200.00	182.14
PHILCO DE-6F4	145.95- 229.00	174.73
SEARS KENMORE 5893	179.00- 209.95	189.94
FRIGIDAIRE DCDFK	169.95- 275.00	222.32
GAS MODELS		
RCA WHIRLPOOL LPI 992-1	190.88- 239.00	211.59
FRIGIDAIRE DCIAGK	188.88- 269.95	237.10
WESTINGHOUSE DGF-400	208.00- 259.88	226.44
SPEED QUEEN 150AF	179.00- 229.99	208.46

Television Repair Records

WHO'D HAVE THOUGHT IT COSTS ABOUT AS MUCH TO KEEP TV SETS IN REPAIR AS WASHING MACHINES?

This is another installment in our continued story, "The Repairman Cometh." Using data from CU's Annual Questionnaires, which are mailed to all subscribers, we have in the past reported the Frequency-of-Repair records of automobiles, washers, and refrigerators, by brand and year.

This month, using data from the 1965 Questionnaire, we report on the service history of 108,000 television sets. This number excludes subscribers' reports on about 1000 sets for which responses were insufficient for reliable analysis, and also the *DuMont* brand, whose parentage has changed.

A scanning of the statistics reported reveals that a rather surprising 40% of the TV sets (in each case, the newest one in the respondent's household) were of 1960 vintage or older, indicating that many of the owners have tried to keep their sets going as long as possible. About 40% were purchased in 1963, 1964, or 1965, and 20% in 1961 or 1962. Nine out of every 10 sets reported were monochrome, a figure likely to change drastically in the future, to judge by the responses in the "plan-to-buy" section of the Questionnaire; color television sets led all other product categories by a wide margin.

About 55% of the sets purchased from 1961 to 1965 needed repairs at one time or another, and most of this number suffered at least one breakdown during the past year. Of the sets needing repair, 10% were out of service during the year for periods totaling about two weeks or longer, and another 15% for about a week. On an overall basis, about half of the sets that had needed repair during their life had made at least one trip to the repair shop.

As is evident from the 55% repair figure, about 45% of respondents owning sets purchased from 1961 to 1965 reported no repairs, not even a tube replacement. As might be expected, many of these owners had newer sets. But even among sets bought in 1961, 15% had not needed repair. Among individual brands were some even more remarkable records. We found that 54% of the *General Electric* sets bought from 1961 to 1965 had survived without repair, 51% of the *Zenith* sets, 48% of the *Emerson* and *Admiral* sets, and 47% of the *Motorolas*. Even at the lower end of the list there were many owners who had never paid a repairman to touch their sets: 39% for *Philco*, 35% for *Westinghouse* and *Wards*, and 31% for *Packard Bell*.

These surprisingly high figures are explainable at least partly, we think, by the fact that people frequently tolerate poor-quality pictures on their screens. Some, no doubt, do so to avoid or postpone what may, they fear, be expensive repairs. Some, perhaps, are not aware how much better a picture they might have after a tube replacement or minimal adjustment.

The Frequency-of-Repair records, broken down by brand and year, show very sharp differences. For example, *Zenith* every single year clearly required less frequent repair than the average for the group; and *Packard Bell* every year required repair well over the average frequency. Some brands (*Emerson*, for example) have fluctuated widely from year to year. The table below shows the pattern for each of the 13 brands for which we obtained enough data for analysis.

Among the sets bought in the 1961 to 1965 period, pic-

FREQUENCY-OF-REPAIR RECORD OF TELEVISION SETS

Key: ++ Clearly better than average of all sets for that year; + Somewhat better than average; Avg. Average; — Somewhat worse than average; — Clearly worse than average.

	Number of sets reported on	1965	1964	1963	1962	1961	1960 and earlier
ZENITH	29,500	++	++	++	++	++	++
RCA VICTOR	24,000	—	—	—	—	Avg.	—
GENERAL ELECTRIC	13,400	++	++	+	+	Avg.	++
ADMIRAL	7,100	Avg.	Avg.	+	Avg.	Avg.	Avg.
MOTOROLA	6,700	Avg.	+	Avg.	++	+	++
SEARS	6,200	—	—	—	Avg.	—	—
PHILCO	5,600	Avg.	Avg.	Avg.	—	—	—
MAGNAVOX	5,100	—	—	—	—	—	Avg.
SYLVANIA	2,800	—	Avg.	Avg.	Avg.	Avg.	Avg.
WESTINGHOUSE	2,600	Avg.	Avg.	—	—	—	—
EMERSON	2,200	Avg.	Avg.	+	++	Avg.	—
PACKARD BELL	1,400	—	—	—	—	—	—
WARDS	1,000	—	—	—	—	Avg.	Avg.

TV REPAIR RECORD continued

ture-tube replacement, usually the most expensive repair to a TV set, was required on no more than about 10% of those that had needed repairs. Curiously enough, the 10% figure was about the same whether the set was one year old or five. Among sets bought in 1960 or before, more than 40% of those repaired had a replacement tube.

The above figures, however, should not be interpreted strictly as an indication of how many picture tubes actually needed replacement. Because of the high cost for this repair, many owners trade in an old set for a new one when the tube goes. Since the readers were reporting only on presently-owned sets, all the cast-offs were automatically eliminated. Many other set owners may have been putting up with a picture tube that should have been replaced but was still giving marginal performance. On the other hand, some owners, acting on faulty advice from repairmen, may have replaced a picture tube before its time had come.

Laundry vs. television upkeep

Among household appliances, washing machines have the reputation, probably deserved, of consuming a high percentage of repair dollars. It is somewhat dismaying to discover from this Questionnaire survey that television sets rival washing machines in repair costs. The table below and a similar table published with our Frequency-of-Repair story on washing machines in CONSUMER REPORTS, October 1963, are remarkably similar.

Nearly the same percentage of that survey's washing machines needed repairs as did the television sets covered here: 60% of the one- to eight-year-old washing machines, 55% of the one- to five-year-old television sets. (The latter would be 70% if we included 1960 and older sets.) And average total expenditures on repair of washing machines and television sets of the same age were about the same. The older the set, naturally, the more repair money is likely to have been spent on it.

These Frequency-of-Repair records, cannot, of course, be applied with certainty to a manufacturer's current models, but CU believes that a buyer stands a better chance of getting trouble-free service from a brand with a good record in the past than from one with a poor record.

AMOUNTS SPENT ON REPAIRS

Year of purchase	Up to \$10	\$11 to \$25	\$26 to \$50	\$51 to \$100	Over \$100	Average
All years combined	24%	23%	22%	20%	11%	\$27
1965*	66	19	10	4	1	12
1964	55	24	12	5	4	18
1963	46	30	13	8	2	20
1962	33	29	26	9	3	26
1961	24	30	24	17	5	33
1960 and earlier	8	18	26	30	18	54

* Less than a full year.

economics for consumers

New Rules for Household Movers

Some mildly consumer-oriented changes, which will soon apply, do not go nearly far enough

The annual wave of American family migration to new homes reaches its crest in summer and subsides toward the end of September. In addition to the heartaches that normally accompany this uprooting process, too often the moving van fails to pick up or deliver until days or weeks after its promised arrival time; breakage or loss is almost inevitable; moving companies often drag their feet in handling claims for the cost of repairs or replacement and then, many months later, they may make tight-fisted offers of settlement.

It is at such moments that many people turn for help to the Interstate Commerce Commission (if their move has taken them over a state line) or to a state public utility commission. It is then, too, that people discover that, although household-moving companies are subject to government regulation, almost all the rules seem to favor the mover at the expense of the moved.

The California Public Utilities Commission provides a timely example. Despite new authorizing legislation, it dropped plans earlier this year to discourage the widespread practice of giving unrealistically low estimates of moving costs. Having underbid the competition, the "low" bidder proceeds to charge exactly what everyone else would have charged under state-regulated shipping rates. But the family being moved faces a new hardship. Unless it can pay the unexpectedly high bill right on the spot, the van will take all the belongings to a warehouse. Not only is the consumer then deprived of his furnishings, he incurs high additional costs for handling and storage.

Against this discouraging backdrop, the Interstate Commerce Commission has finally set a date for imposing on interstate movers a few rules favoring consumers. The action comes too late to help people who have moved or are about to do so during the present peak season. It was first scheduled to go into effect September 30, but has now been set back to January 1, 1967, so that the movers can steel themselves for the ordeal of living with mildly consumer-minded regulation. Under the new rules, movers will have to give advance notice when charges are going to exceed estimates by more than 10% (or \$25 on ship-

ments costing less than \$250), at least 24 hours before the van arrives at the new home.

Movers must also telephone or telegraph their customers if the van is going to be delayed a day or more in making its delivery. Again, notice will have to reach you at least 24 hours before the originally scheduled delivery date. The ICC also specifies for both notices that the mover must pay for the phone call or wire. He is excused from sending a notice only if his customer did not leave an address or phone number.

It remains to be seen how faithfully movers will observe these and other new rules. Violators are subject to fines up to \$500 per infraction of the new rules, as well as of existing ones, and the ICC has as its ultimate weapon the suspension of a mover's interstate business permit. But we have yet to hear of a mover's being penalized. However, the ICC says it is very anxious to hear of any complaint and, if necessary, can wield considerable influence on an offending mover without taking formal action against him. The man to write is George Meyer, director of the Bureau of Operations and Compliance, Interstate Commerce Commission, Washington, D.C. 20423.

Paying the damages

The most important new ICC rule will spell out more clearly the mover's financial liability for articles that he loses or damages. He will be prohibited from selling trip-transit insurance underwritten by an outside insurance company. Unless a customer specifically requests the mover to assume only minimal liability, all legitimate repair and replacement costs will become the mover's obligation up to an amount the customer declared beforehand as the total value of the shipment. Your appraisal can be as high as necessary for complete protection, but the higher it is, the more you will pay. The loss insurance rate is set at 50¢ per \$100 of valuation. However, you will not be allowed to declare a lower valuation than \$1.25 per pound of goods shipped. Thus, a shipment weighing 8000 pounds must be appraised at no less than \$10,000; the insurance fee for this shipment, in addition to regular shipping charges, can be no less than \$50.

This rule is not an undiluted boon to consumers. Because the new full-value coverage will be automatic unless you specifically reject it, it will no doubt add handsomely to the movers' cash intake. The settlement of claims will not be based automatically on your own appraisal, but will depend, as it does at present, on the mover's judgment of what the damage is worth. Your declaration of total value merely sets the mover's *maximum* liability.

On the other hand, the mover will be deprived of one of his favorite means of knocking down the size of the claim. At present, if he decides that a shipment was insured for less than its real value, he can usually make the customer "co-responsible" for any damage done. For example, the mover might totally ruin a \$1000 piano that is part of a shipment valued by its owner at \$10,000. By declaring that the shipment was really worth \$15,000, the mover argues that it was under-insured by one-third. On that basis he will pay no more than \$667 for the ruined piano. Such "co-responsibility" will be banned.

If you don't want to buy full protection, the mover must accept a shipment at no extra liability charge. Under the new rules, he will then be legally obligated to pay no more than 60¢ per pound for damages figured on the weight of the damaged article—up from a present 30¢.

Which type of liability should you choose, full or partial? Quite obviously, full protection is best for those who can afford it. The question is whether, even under the new rules, movers will pay claims fairly. Nothing in the ICC rules assures that they will.

The rules do no more than set a time limit on the handling of claims for damages. Movers will have to acknowledge all written claims within 30 days of receipt, and they will have to make a settlement offer or else formally reject the claim within 120 days, except "for reasons beyond control." An ICC spokesman told CU that under this rule there should be much less buck-passing between a national moving company and its local agents and claims adjusters. He said extended delays are likely to be countenanced mainly when it is difficult to obtain a reliable appraisal of some valuable article.

But, as the ICC itself explains in a pamphlet that movers under the new rules will give to every customer: "The Interstate Commerce Commission has no authority to compel carriers [movers] to settle claims for loss or damage and will not undertake to determine whether the basis for, or the amount of, such claims is proper, nor will it attempt to determine the carrier liable for such loss or damage."

Collecting claims from movers is often a long and difficult process, described in CONSUMER REPORTS most recently in the letters column of the April 1966 issue. We have since learned that people whose goods are covered by trip-transit insurance may be able to speed up dilatory claims-handling by describing the situation in a letter to their state insurance commissioner. This recourse will not be available under the new rules, however, because movers will then become self-insurers (as some of the larger outfits already are).

Under both old and new rules, the mover remains, in effect, the seller of insurance guaranteeing his own service and integrity. He is also the judge and jury for determining claims against himself. Dissatisfied claimants can always take their cases to a real court, but the amount of recoverable damages rarely will be large enough to warrant the outlay for legal expenses.

An idea for the future

In CU's opinion, Congress should establish some system whereby the ICC authority could rule on any disputed interstate claims; but it would need special informal hearing procedures (perhaps patterned after small-claims courts) so that claimants would not have to hire a lawyer. We are convinced by our own survey of a few years ago (CONSUMER REPORTS, July 1963) and by an unending stream of subsequent letters from readers that consumers will otherwise continue to have no practical way of getting an equitable settlement of economic losses suffered at the hands of moving companies. The present system is, as we see it, intolerable.

PLAYPENS

SOME OF THE 16 WERE JUDGED CONVENIENT, NONE ESPECIALLY DURABLE. SOME POSED HAZARDS

As any harried mother will tell you, it's almost impossible to ride constant herd on a very small child while getting on with the daily chores. Once he can creep or walk, your Dennis is more menaced than menacing—by things he can fall over or hurt himself with, not to mention harmful substances or objects he may swallow.

It's not surprising, then, that many parents turn to playpens for their inquiring youngsters. Some psychologists claim that even such gentle incarceration is undesirable because it prevents a baby from exploring and gaining independence. Others, however (CU's medical consultants among them), hold that pens cause no psychological harm unless used as almost full-time baby sitters, and that they may even help a child learn to stand or walk.

We tested 16 pens with floors about 37 to 40 inches on a side. Ten of them are of the increasingly popular metal-frame type with woven-mesh sides, and six are wood-frame models (five with slat sides; one, slats plus mesh).

Our wood-frame samples were as a rule less expensive than the metal models. Their pads can be tied down easily and their slats provide something firm for a child to pull himself up with. On the other hand, metal-frame pens were generally easier to open and fold. And, because of the "give" in their mesh sides, you can fold and carry them with toys inside. With one exception (the 35-pound, metal-frame *Gem*), both wood and metal models weigh between 21 and 28 pounds not including the pad.

Some of the pens have one or two sides that can be lowered, generally reducing the height of the side to

about 7 inches above the playpen floor. Such a playpen may reduce the possibility of backstrain when a heavy baby is to be lifted from the playpen floor. Lifting a child over an undropped side (the highest is 32 inches) becomes even more difficult when the pen's floor is low. While most of the pens have floors between 7 and 9 inches above the ground, those of the *Argo* and the *Sears Cat. No. 88110* are raised only 5¾ inches. The *Cosco's* floor is raised only 4½ inches, but its drop sides more than counterbalance the inconvenience of the low floor.

How mobile are they?

Whether you want to move a playpen around or not, its wheels, if any, may prove important. All the wood-frame pens tested and one metal-frame model have wheels at each corner. Two of these also have a fifth wheel at the center of their floors. Others have two wheels, and some none.

At first thought, a pen with wheels at all four corners might seem the obvious choice for mobility. But a child in a four-wheeled pen might, by rocking it, be able to edge the pen over to where he could reach some object he shouldn't (none of the pens tested have brakes on their wheels). For this reason, CU considers two-wheeled pens preferable; it's easy to lift one side to move them.

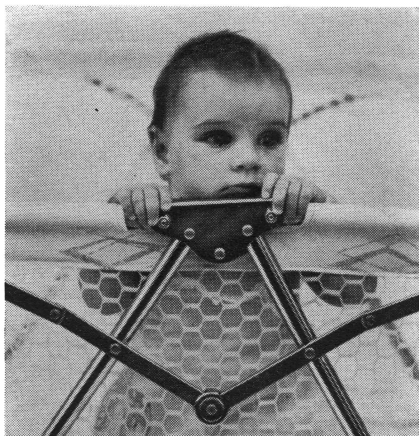
Swivel wheels make a pen slightly more mobile than fixed wheels. Seven of our test models have swivel wheels; nine do not. Pens with large wheels (3 inches in diameter) are a bit easier to move on a soft rug or lawn than those with small or medium wheels (1 or 2 inches).



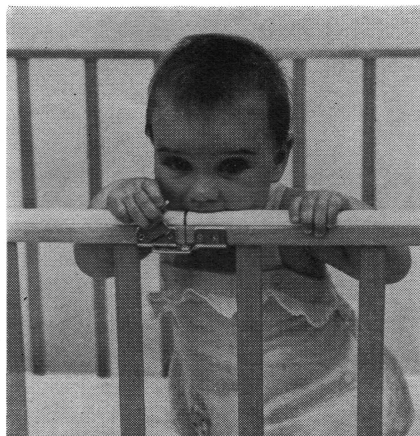
The only wood-frame model with a drop side among those tested is the Penneys 2762. It can make lifting baby less strenuous



The Cosco's drop sides will more than compensate for any inconvenience that may come from this playpen's extra-low floor



There are no latches for baby to open on the Thayer 26694, and we found no scrape or pinch hazard in its hardware



But an infant can open the latches on some wood-frame pens. She then might be pinched in the resulting gap



A sharp-cornered plastic latch (left of baby's face) holds Thayer 26635's floor when it is folded; it could scratch her

On the pens with nonswivel wheels, the wheels are attached to the side of the legs rather than at the bottom. In some, the legs do not clear the floor by enough to avoid their snagging on carpet or turf, particularly when a child is aboard. And some use stamped metal caps to hold the wheels on the axles; in the course of testing, some caps dropped off. CU recommends that the owner of such a pen replace the axles and caps with bolts and nuts.

All the pens with fewer than four wheels have either smooth metal runners or plastic-capped feet at the wheelless corners. The latter are less likely to mar a floor than the former unless the caps fall off or wear through. The plastic caps on some pens with canted legs rest on an edge and probably will wear through faster than caps resting squarely on the floor. It might be wise to keep replacement caps on hand for such a model.

Half the pens tested have an additional leg at the center of the floor or two at the sides. While these do buttress the pen floor somewhat, we didn't find any pen with them much more durable than models without.

The four-wheel *Penneys* 2762 has a wooden, square-ended, center leg with a smooth metal "button" foot that's about as likely to scratch a floor as are metal runners. This leg will drag on a rug or soft lawn. The resulting stress may eventually loosen the flooring. This pen should be wheeled with one side lifted.

If you will often want to transport or store your pen, folding convenience takes on extra importance. The metal-frame *Gem* was judged the easiest to open and fold. You stoop only to take out the pad and you don't have to open or close any latches or snap and unsnap braces. You merely step on a pedal to bring the floor up, and pull the pen's sides together to complete the folding operation. However, this pedal may jab the shin of a passerby; further, its attachment was judged flimsy.

At the other extreme are three wood-frame pens (the two *Tiny-Tots* and the *Wards*). Opening them is particularly bothersome. You have to unfold the frame, align the pen floor with support brackets, lower each half of the floor, and finally brace the sides by turning thumb-

screws or wingnuts. These three pens (and the *Gem*) were all found relatively clumsy to carry, too.

The pens tested can all be folded to dimensions between 28x39x4½ and 36x43x7 inches. By telescoping its legs, you can further reduce the folded height of the *Cosco* from 32½ to 23¼ inches. When folded, all the pens will stand if you spread the legs about a foot.

How durable and safe?

How long a pen will last depends largely on how heavy, strong, and active its occupant is and on how carefully his parents handle the pen. A pen called on to withstand twins or a larger brother who feels he has equal rights to be in the playpen may well find its life radically shortened.

Delving into the pens' durability, we first took a close look at construction. We then dropped a 50-pound sandbag onto at least two areas of the floor of each pen from heights that would give a fair indication of sturdiness. The results of this test were used to judge the cumulative effects of jumping, multi-tot use, and general wear.

Every one of the pens was damaged to some degree in this test. In some instances metal tubing, channels, angles, and brackets were permanently bent; in others, screws or nails pulled out or floors broke. (Several of our samples were received with minor defects; you should check a new pen over for damage before purchase, if possible, or right after delivery.) The differences in estimated durability contributed substantially to the order of the models in the Ratings.

Rusting, water-damage, and sun can also shorten a pen's life. You shouldn't, therefore, leave any pen outdoors unnecessarily. Pads, included in the prices of some pens, won't find moisture (or hard wear) friendly either. Pads filled with polyurethane foam are likely to be longer-lived than those stuffed with cellulose fiber. Polyurethane won't mildew, and it retains its resilience better.

All the pads are covered with a plastic film except the *Cosco*'s, which is sheathed in impregnated fabric, judged more durable. Pads for the *Penneys* 3265 and the *Kiddie*

PLAYPENS continued

King are covered with a quilted, fused sandwich of plastic film, a very thin layer of padding, and a second plastic sheet. This covering was also judged more durable than nonquilted plastic-film pads.

The tie ribbons on all the pads furnished with the wood-frame pens provide an easy way to balk a child bent on pulling the pad out of place. The ribbons on the *Wards 4426* did tear out very readily, but could be re-sewn with little effort. None of the metal-frame pens lend themselves to securing a pad this way. Indeed, none of the pads that came with them have ribbons. The durable pad of the metal-frame *Cosco* is nevertheless secure from a child's lifting—it's stapled to the pen floor. But this feature makes the pen somewhat awkward to clean.

Wood-frame and metal-frame construction each presents its own hazard to a child inside. An infant who squeezed his body or head through the 3½-inch spacing of the slats on our wood-frame pens might strangle himself trying to get free; there is at least one medical journal report of this happening to a child in a crib. In a mesh-sided pen, there is a chance a child might snag a button in the mesh and be choked by his clothing if he fell.

The pen manufacturers could have eliminated this first possibility by reducing the amount of spacing between the slats. Since they didn't, you can solve the problem with sheeting interwoven between the slats, tautly fastened, and left in place until a child has grown too big to squeeze through the openings.

If your choice is a mesh-sided model, one recourse is to watch out for protruding buttons—perhaps by dressing the child in snap-fastened or zippered clothes when he's due for a spell in the pen. A child should, of course, not be left unattended for long in either type of pen.

Don't string cord across any pen. And if you hang toys from a side, the cord used should be too short for the child to wind it around his neck.

Hardware on several pens could scrape or scratch a child. On several others, the hardware could, if carelessly fastened, allow him to push a side down and get out. Offenders in these respects are noted in the Ratings. Most of the metal-frame pens have roughly 4x1-inch openings in the floor to make it easier to lift each half for folding. Even with the pad in place, these holes might cause a child to lose his balance and fall when he steps on the pad over that part of the floor. A lead-content test yielded cheerier news: none of the exposed paint surfaces offer any danger of lead poisoning should the child chew on the paint.

RATINGS OF PLAYPENS

Listed, except as noted, in order of estimated overall quality based on laboratory tests and on judgments of durability, convenience, and safety. Prices given are list; discounts are generally available.

Each pen has a hardboard floor between about 37x37 and 40x40 in., and rails 21 to 24 in. above the pen's floor. Dimensions—folded without pad—are in order of height, width, thickness. Except as noted, each has a pad stuffed with cellulose fiber and covered with plastic film; weighs between 21 and 28 lb. without the pad; has at least 1 drop side that can be lowered to about 7 in. above the pen floor; requires release of braces and stooping when it is being folded; and was judged convenient to carry when folded. Each wood-frame pen, except as noted, has wood slat sides, spaced about 3½ in. apart, and allows a pad to be secured easily with tie ribbons (present on all pads furnished). Each metal-frame pen has sides of woven mesh, and was judged unsuitable for securing pads with tie ribbons (present on none of the pads furnished).

ACCEPTABLE

THAYER 26694 (Thayer, Inc., Gardner, Mass.), \$24.95 with pad. Metal frame. Folded dimensions: 35⅞x41x5 in. Large nonswivel wheels at 2 corners; tubular frame extends to within 1/16 in. of wheel bottoms, a construction which results in dragging on rug or lawn when pen is wheeled. Plastic-capped feet at other 2 corners do not rest squarely on floor, hence may wear more rapidly. Also has plastic-capped feet at centers of 2 sides. Ease of opening, excellent. Ease of folding, very good. Two 4x1-in. openings in floor for folding and carrying. No drop sides.

ARGO 199 (Argo Industries Corp., Jackson Heights, N.Y.), \$24.95 with pad. Metal frame. Folded dimensions: 33¾x40¼x6½ in. Large

nonswivel wheels at 2 corners; tubular-metal runners at other 2 corners. Ease of opening and folding, excellent. Judged to present slight scrape hazard to child inside. No drop sides.

SEARS Cat. No. 88110 (Sears, Roebuck), \$15.98 plus shipping with polyurethane-filled pad. Wood frame. Folded dimensions: 27¼x42x5¾ in. 4 small swivel wheels. Ease of opening, good. Ease of folding, fair-to-good. Folded pen judged convenient to carry with pen up-side down, otherwise less convenient than most others tested. No drop sides.

TINY-TOT 5501 (Tiny Tot Mfg. Co., Inc., Merrill, Wis.), \$15 without pad. Wood frame. Folded dimensions: 32x40¾x5¼ in. 4 medium-sized swivel wheels. Ease of opening and folding, fair. Folded pen judged less convenient to carry than most others tested. No drop sides.

TINY-TOT 5522 (Tiny Tot Mfg. Co., Inc.), \$22.95 without pad. Wood frame; each side has 4 slats and 2 pieces of molded plastic mesh. Folded dimensions: 32¼x40½x5 in. 4 medium-sized swivel wheels. Ease of opening and folding, fair. Folded pen judged less convenient to carry than most others tested. No drop sides.

COSCO DELUXE 17B (Hamilton Cosco, Inc., Columbus, Ind.), \$26.98 with pad stapled to pen floor (see story); pad has impregnated fabric covering, judged more durable than plain plastic film. Metal frame. Folded dimensions: 32½x40x4½ in. (legs not telescoped). For more compact storage, telescoping legs reduce height to 23¼ in., less than that of any other pen tested. No wheels; tubular-metal runners at 4 corners and at centers of 2 sides. Ease of opening and folding, fair.

PENNEYS Cat. No. 2762 (J. C. Penney), \$17.95 plus shipping with polyurethane- and cellulose-filled pad. Wood frame. Folded dimensions 32x41¼x5 in. 4 medium-sized swivel wheels. 5th leg in center dragged when pen was rolled over rug or lawn on the 4 wheels; the resulting stress on the pen bottom might eventually cause damage. Ease of opening and folding, fair-to-good. Drop side allows

height of side to be reduced to 22 in. ($12\frac{3}{4}$ in. above the pen floor).

¶ *The following pens were judged somewhat flimsier than those above.*

WARDS Cat. No. 4426 (Montgomery Ward), \$17.90 plus shipping with pad. Wood frame. Folded dimensions: $32 \times 42\frac{1}{2} \times 4\frac{1}{2}$ in. 4 medium-sized swivel wheels. Ease of opening and folding, fair. Folded pen judged less convenient to carry than most others tested. No drop sides. Tie ribbons on pad were very easily torn out.

PRIDE TRIMBLE 743 (Pride Trimble, Glendale Calif.), \$27 with polyurethane-filled pad. Metal frame. Folded dimensions: $34\frac{1}{2} \times 42 \times 5$ in. Medium-sized nonswivel wheels at 2 corners; tubular frame extends to within $\frac{5}{16}$ in. of wheel bottoms and may drag on a lawn when pen is wheeled. Plastic-capped feet at other 2 corners. Ease of opening and folding, good; but forgetting to lock braces may allow child to push side down and climb out. 4×1 -in. opening in floor for folding and carrying. Judged to present slight scrape hazard to child inside.

WARDS Cat. No. 4803 (Montgomery Ward), \$19.95 plus shipping without pad. *Wards Pad, Cat. No. 7703*, \$1.98 plus shipping; *Wards Pad, Cat. No. 7775*, \$3.49 plus shipping. Except for lack of pad, color, and some fasteners, essentially similar to *Pride Trimble 743*, preceding. All comments and dimensions apply.

PENNEYS Cat. No. 3265 (J. C. Penney), \$19.49 plus shipping with quilted pad judged likely to be more comfortable and durable than most other pads tested. Metal frame. Folded dimensions: $35\frac{1}{2} \times 42\frac{1}{4} \times 6\frac{1}{4}$ in. Large nonswivel wheels at 2 corners; tubular frame extends to within $\frac{5}{16}$ in. of wheel bottoms and may drag on a lawn when pen is wheeled. Plastic-capped feet at other 2 corners do not rest squarely on floor, hence may wear more rapidly. Also has plastic-capped feet at centers of 2 sides. Ease of opening and folding, good; but forgetting to lock braces may allow child to push side down and climb out. Two 4×1 -in. openings in floor for folding and carrying. Retainer caps on wheel axles came off in CU's tests; caps and axles can easily be replaced with inexpensive nuts and bolts. Judged to present slight scrape hazard to child inside. Not in current catalog, but may still be available in J. C. Penney stores.

ROYAL LINE R7752 (Pride Trimble), \$23 with pad. Metal frame. Folded dimensions: $34\frac{3}{4} \times 42\frac{1}{2} \times 6$ in. No wheels; tubular-metal run-

ners at 4 corners and plastic-capped feet at centers of 2 sides. Ease of opening and folding, good; but forgetting to lock braces may allow child to push side down and climb out. Mesh size may be too small to allow child to grasp it for pulling himself up and for support. Two 4×1 -in. openings in floor for folding and carrying. Judged to present slight scrape hazard to child inside.

¶ *The following pens were judged to present more serious scrape or scratch hazards to a child inside than any other pen with such hazards. Listed alphabetically.*

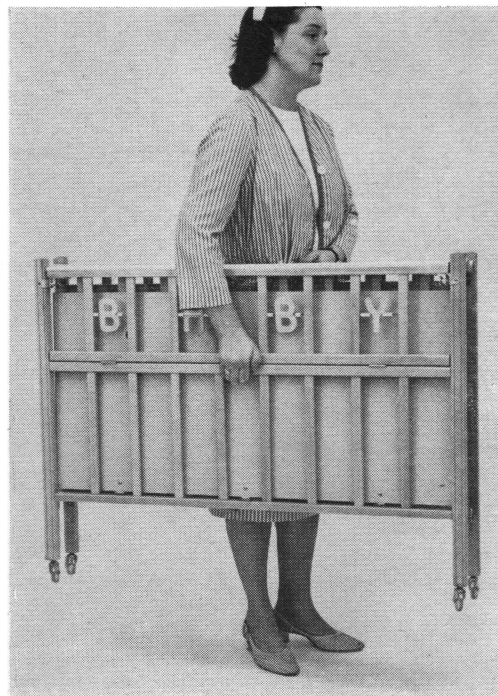
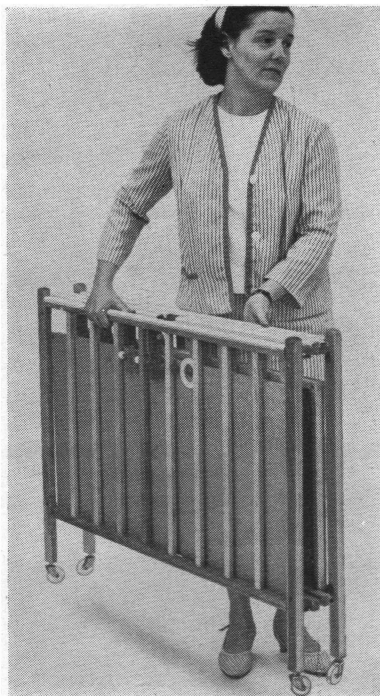
GEM 962 (Gem Industries, Inc., Gardner, Mass.), \$32.95 without pad. Metal frame. Folded dimensions: $32\frac{1}{4} \times 40 \times 4\frac{3}{4}$ in. At 35 lbs., heaviest pen tested. Medium-sized swivel wheels at 4 corners; small swivel wheel on 5th leg at center. Ease of opening and folding, excellent. Folded pen judged less convenient to carry than most others tested. Protruding pedal for closing pen may be struck by shin of a passerby; pedal attachment to pen judged somewhat flimsy. No drop sides.

KIDDIE KING 301 (Baby Bathinette Corp., Canandaigua, N.Y.), \$27.95 with quilted pad judged likely to be more comfortable and durable than most other pads tested. Metal frame. Folded dimensions: $36\frac{1}{4} \times 41\frac{1}{2} \times 7\frac{1}{4}$ in. No wheels; plastic-capped feet at 4 corners do not rest squarely on floor, hence may wear more rapidly. Plastic-capped feet at centers of 2 sides. Ease of opening, very good. Ease of folding, good. Two 4×1 -in. openings in floor for folding and carrying.

SEARS Cat. No. 88130 (Sears, Roebuck), \$22.95 plus shipping with polyurethane-filled pad. Metal frame. Folded dimensions: $32\frac{3}{8} \times 39 \times 6\frac{1}{4}$ in. Medium-sized wheels at 2 corners; tubular frame extends to within $\frac{3}{16}$ in. of wheel bottoms and will drag on rug or lawn when pen is wheeled; plastic-capped feet at other 2 corners may mark some floors. Ease of opening and folding, good; but forgetting to lock braces may allow child to push side down and climb out. Judged somewhat flimsier than most others tested. Two 4×1 -in. openings in floor for folding and carrying. Rail height above floor, 19 in., less than that of any other pen tested.

THAYER 26635 (Thayer, Inc.), \$17.95 without pad. Wood frame. Folded dimensions: $31\frac{3}{4} \times 39\frac{3}{4} \times 6\frac{1}{4}$ in. *Thayer Pad No. 32651*, \$3.95; *32649*, \$4.95; *32658*, \$4.95. 4 medium-sized swivel wheels, 5th swivel wheel at center. Ease of opening, good. Ease of folding, fair-to-good. No drop sides.

Unless you want its legs to drag, you have to tote the Tiny-Tot 5501 with elbows uncomfortably bent (near right). But the drop-side arrangement on the Penneys Cat. No. 2762 provides a convenient grip



The Case of the Fishy "No"

Federal files hold a lot of good product data; getting it is something else again

Donald F. Turner, the head of the Justice Department's Antitrust Division, observed in a recent speech that consumers need help in figuring out whether one product is better than another, if they are to secure the benefits of a competitive marketplace. Present brand-name advertising does not provide enough of this help, he indicated, and its undue accent on a few brands leads to market concentration. He went on to suggest that the Government should either undertake product research or else subsidize an independent testing organization such as Consumers Union.

CU certainly agrees that more product research is needed. But, though we are pleased that Mr. Turner should deem our organization worthy of subsidy, we are also a little puzzled. The Government, you see, already conducts a rather large volume of research on consumer products. Some of the findings are used in making purchases for Government use; this is all to the good, because it makes for efficient use of tax money. Other findings are designed to help various industries improve their products. Hardly any of this product research, though, is published in useful enough detail to benefit the consumer.

Only last May, for instance, a newsletter of the frozen food industry disclosed, for the first time to our knowledge, that the Bureau of Commercial Fisheries of the U. S. Department of the Interior has, for the past four years, been grading samples of frozen fish bought at retail stores. The project was done at the request of the National Fisheries Institute, a trade association, possibly as a result of

CU's repeated publishing of test results showing widespread low quality in various kinds of frozen seafood.

The newsletter, *Frozen Food Executive Bulletin*, put the results in a nutshell: "The verdict: Quality is every bit as bad as Consumers Union has been claiming."

The newsletter published summary figures showing that only 7% of frozen breaded fish portions purchased by the Government a few months ago was Grade A and only 38% was Grade B. The remaining 55% was either Substandard or could not be graded, either because the flavor or odor was too poor to qualify as even Substandard, or because the samples failed to meet the USDI's minimum requirements for breaded fish portions of 75% fish flesh in uncooked products and 65% fish flesh in precooked products. In CU's last test of frozen fish portions, 50% of the brands tested were judged Not Acceptable (CONSUMER REPORTS, May 1965).

In other surveys conducted by the Government during 1963-66, various species of fish offered frozen in retail stores ranged from 26% to 69% Substandard or ungradable. These figures do indeed confirm what CU "has been claiming"—our results being based, of course, on objective tests by independent experts.

Hoping that the Bureau of Commercial Fisheries' data might include valuable brand information that could be passed on to CU readers, we asked the Bureau for a copy of its survey results. The reply was courteous, complimentary, and negative.

The surveys were "specifically designed to assist the fish processing industry," the Bureau said—and not (one must infer) to help the general public, whose taxes made the surveys possible. If the public received the information, the Bureau said, the industry might no longer cooperate with the Government, and this would "set back our efforts to help the industry improve the quality of frozen fishery products."

The fish processors, distributors, and retailers have been talking for years about the need for improving their production and handling of frozen fish products. "We are hopeful," said the Bureau in its letter of refusal, "that through the joint efforts of the industry, our USDI inspection service, and consumer oriented groups such as yours, frozen fish products of consistently high quality will be available to the consumer."

The existing lack of progress toward better-quality frozen fish does not seem to sustain this hope. Perhaps nothing would galvanize the industry into improving matters as much as the release of Government figures, preferably brand by brand, on just how poor the product really is.

Mr. Turner, meet the Bureau of Commercial Fisheries. Bureau of Commercial Fisheries, meet Mr. Turner.

GARDNER REA FOR CU



"Well, then, since all of the independent surveys have let us down, how about trying a *dependent* research outfit?"

ROAD TESTS OF TWO MEDIUM-PRICED IMPORTS

VOLVO and TRIUMPH SEDANS

Although the American compact car may owe its existence to the growth in popularity here of small European economy cars, it is actually a medium-sized car by European concepts. Europe makes relatively few cars in this size range, hence the American compact doesn't have too much direct size competition from European makers. But there are a few challengers.

CU chose two of them for road testing, the *Volvo 122S* and the *Triumph 2000*. Both compete with the majority of U.S. models, and at about \$3000, they spot the compacts a \$500 price handicap. Compared with the average of U.S. compacts, these imported, four-door sedans are about a foot shorter overall, about half a foot narrower, and a few inches higher. They are advertised as five-passenger cars, but three adults are uncomfortably crowded in the rear seat, especially in the *Volvo*. Luggage capacity in both cars is also smaller than in any U.S. compact except the *Corvair*. Visibility in the *Triumph* is excellent all around, while the *Volvo*, with smaller windows and a higher-crowned hood, has areas of restricted vision fore and aft.

Each of these cars has individual front seats. The *Volvo's* are bucket-type seats, firm and tightly trimmed in ventilated vinyl, and well contoured in both seat and back. You can adjust the cushion angle, the back angle, and, unique with *Volvo*, the support for your lower back. On CU's sample, however, the back-angle adjustment would not hold firmly in any but the farthest-back setting. In overall comfort, we would rank the *Volvo* front seats among the best we have encountered. Leg and foot room are more than adequate.

The *Triumph's* individual front seats provide you with luxurious, extremely soft foam padding on both seat

and back cushions. In summer, though, the unventilated vinyl trim makes the sitting hot and sticky. *Triumph's* seat backs are adjustable to a fully reclining position and there is a generous front-to-back adjustment of eight inches. But the seat was very difficult to move in CU's sample because of binding in the seat tracks; a prospective buyer should check this. The car's front floor area is restricted by an enormous transmission housing.

Rear seat passengers have more room in the *Triumph* than in the *Volvo*, and they sit on softer cushions. Both cars have a fold-down center armrest in the rear and have knee room comparable to American compacts. Entrance to the rear compartment is very restricted in the *Volvo*, but not in the *Triumph* (see photos, page 459).

Rough ride on back roads

The *Triumph* rode better than the *Volvo* when lightly loaded (driver and passenger), but when carrying the manufacturer's maximum recommended load, both were judged to ride poorly on rough back roads. Lightly loaded, the *Triumph* afforded a soft yet reasonably steady ride on good secondary roads except for occasional abrupt up-and-down motions, snubbed rather hard at the bottom to give a quite uncomfortable sensation. Although the suspension transmitted very little road noise or harshness to the interior, it could not cope with the full, 1000-pound load (driver, four passengers, and 250 pounds of luggage) over large, sharp bumps. They produced quick fore-and-aft pitching, the rear end coming up short and hard at the bottom of its suspension travel. Also, with a full load in the *Triumph*, its tires' sidewalls were deformed by the lateral forces generated around sharp turns and in lane-



LEFT: Triumph, braking hard, has only a moderate nose dive and hence little transfer of weight from rear to front. RIGHT: Volvo leans in hard cornering, but handles stably with no oversteer

VOLVO AND TRIUMPH continued

changing maneuvers at parkway speeds, resulting in some loss of directional stability. Though the owner's manual makes no such suggestion, CU recommends that the *Triumph's* tires be inflated to at least 4 pounds over normal pressures when the car is to be fully loaded.

With two occupants, the *Volvo* rode firmly but with short, quick up-and-down motions, tightly snubbed at the bottom, and some side-to-side swaying. The body structure, however, felt solid and isolated from shake. Fully loaded to 950 pounds (driver, four passengers, and 200 pounds of luggage), the *Volvo* rode just a little more smoothly on most roads, but bottomed its suspension on medium-sized sharp bumps. On the largest bump in CU's ride loop, it lightly scraped its gas tank drain plug and muffler. With the full load there was some jolting, and large and persistent up-and-down motions on rough roads.

Nimble handling has been, traditionally, one of the appeals of imported sedans in the U.S., and our two test cars compared favorably with U.S. compacts in this respect. Their shorter overall length and tighter turning circle also made them easier to park and maneuver.

The *Triumph's* steering seemed relatively heavy in normal driving, making the driver feel that he had to do more work to get around a corner, for example, than he had anticipated. In controlled high-speed runs on the sports car track, however, the *Triumph* understeered evenly and accurately into the fastest turns with little steering effort or

manipulation of the wheel, maintained a stable balance, and required almost no steering corrections through the turn. There was very little sliding outward through the corners, although the car, while remaining quite stable, tended to lean on its outside front wheel.

On the whole, the *Triumph* proved an entirely capable car for its power and one which could be considered free of unsafe handling peculiarities, even on roads with poor traction. The *Triumph's* Dunlop C41 tires, however, suffered more abrasive wear than most tires subjected to our handling tests.

CU's 122S did not tarnish *Volvo's* good name for steering and handling. However, the manufacturer's specified tire pressure of 20 psi for the front tires is so low that the tires squeal too easily in normal driving and the high steering effort is increased still further. In CU's opinion, tire pressures should be higher; the easier steering and handling would be worth any increase in ride stiffness.

The *Volvo* steered quickly and accurately in all circumstances, although an allowance had to be made for the considerable sliding outward that occurred during high-speed turns. The car did lean and slide, but it did not oversteer, and it provided stable handling with no sharp, unpredictable changes.

Performance and economy

Both of CU's cars used the Type 35 three-speed automatic transmission recently brought out by Borg-Warner especially for use with the smaller foreign engines. Extra cost was \$180 for the *Volvo* and \$225 for the *Triumph*.

RATINGS OF TRIUMPH 2000 AND VOLVO 122S

Listed in order of estimated overall quality primarily as family transportation and without regard to differences in resale value. Tested models are four-door sedans with optional automatic transmis-

sions. The difference between these two cars in overall quality was judged small. The Facts and Figures table, page 461, gives other test data, prices, mechanical specifications, weights, and dimensions.

ACCEPTABLE	Accommodations	Ride	Handling and steering	Brakes	Engine and performance	Automatic transmission
TRIUMPH 2000	Seating space in front, fair for two; comfort good. Seating space in rear, good for two, tight for three; comfort good	Lightly loaded, fair; felt generally steady with occasional short, sharply snubbed vertical motions, but no overall harshness on coarse road surfaces. Suffered when fully loaded, with some bottoming of suspension and larger tossing motions	Handling, very good, with stable cornering balance. Understeered with little roll or sliding out, but heavily loaded the outside front tire. Almost no steering correction required through turns. Steering, precise, with low effort in hard turns, though steering felt relatively heavy and dead in normal driving	Good overall. Fade resistance fair-to-good	Smooth and fairly quiet. Power adequate	3-speed; smooth and quiet
VOLVO 122S	Seating space in front, good for two; comfort excellent. Seating space in rear, fair for two, very tight for three; rear door openings restrict rear seat entry	Lightly loaded, poor; generally firm with short, sharp motions often producing solid jolts, mostly on small bumps. Ride became less firm when fully loaded, with larger, slower motions. But suspension bottomed and gas tank drain plug and muffler hit road surface on large bump	Handling, good. Cornering balance stable, understeer to neutral. Tire noise unusually high. Steering effort high, with only fair precision because of considerable lean and sliding outward in fast turns	Fair-to-good overall. Fade resistance fair-to-good; pedal efforts required for minimum-distance stops were excessive	Fairly smooth and quiet except for intake roar on acceleration. Power adequate	3-speed; smooth and quiet

Volvo's rear seat (near right) is awkward to reach because of the rear wheel housing, which takes up part of the door area. Triumph (far right) offers adequate access to the rear. Knee room in both cars is about the same for rear seat rider as in U.S. compacts; width is tight for three adults



Acceleration appeared a little sluggish at low speeds, but at parkway speeds response was similar to that to be expected with a manual transmission. Wide-open throttle tests on the track showed the cars to be very much alike in acceleration (see Facts and Figures, page 461). Their performance level was about the same as that of a *Dodge Dart* or *Ford Falcon* with automatic transmission and an engine half again as large, but the two imports require more engine revolutions per mile to do the job.

Fuel consumption, even with the automatic transmission, proved to be about the same as in the *Rambler American*, the most economical of U.S. compacts. Premium fuel, however, is specified for the *Volvo* by the manufacturer, regular for the *Triumph*.

Both cars have the standard PRNDL shift quadrant. The *Volvo's* lever is on the steering column; the *Triumph's* is on the floor, and shifting it involves a rather clumsy gating setup that takes a good deal of getting used to.

The *Volvo* does not have a silenced carburetor air cleaner, so that there is a loud intake roar whenever the throttle is opened. The *Triumph* was quiet at all speeds except for some exhaust noise. Both cars had manual chokes; the *Volvo's* worked well at all times, but the *Triumph's* hand control was sticky and hard to adjust.

Good brakes, but power assist needed

Both the *Triumph* and *Volvo* follow the contemporary European practice of using front disk and rear drum brakes of generous size on each car. Pedal effort requirements on both cars indicate the need for power assist.

The *Triumph* has power-assisted brakes in the form of a vacuum brake booster as standard equipment. Its range of pedal effort for stops from 50 mph was from 10 pounds for a gentle stop to 65 pounds to lock the wheels. These figures make the brakes slightly more sensitive than CU would prefer, but control was never a problem during the tests since the braking action was progressive and stable at all times.

The unassisted brakes on CU's *Volvo* required 35 pounds

THE SMALLER IMPORTS

In the October issue, CU will review road-tests of three small, economy-class imported cars (P.O.E. prices under \$2000): the familiar *Volkswagen 1300*, the *Opel Kadett* (also German made, but marketed by the Buick Division of General Motors), and a comparatively new entry in the small economy class of imports, the Japanese-built *Toyota Corona*.

for a gentle stop and from 160 to 200 pounds to lock the wheels. We strongly recommend the \$60 power-assist option, which could be expected to cut these figures by about one half.

Braking distribution on both cars was excellent. The *Volvo* used a brake-line pressure proportioning valve. The *Triumph* did not, but it did not seem to need one, perhaps because it has only moderate nose dive and so has little transfer of weight from rear to front when braking. Brake fade was not a problem with either car during the 10 repeated stops at 1/2-g deceleration from 50 mph. All stops were straight, and no control problems were encountered. But the *Triumph's* front disk brakes, when cold, squealed loudly as they were applied at low speeds in either forward or reverse—an extremely annoying characteristic.

Convenience and controls

The national origins of the two cars was reflected in the heater and ventilation performance. The Swedish *Volvo's* heater was very powerful, with controls similar to U.S. cars. It was quick to warm up, but there's no provision for supplementary fresh air ventilation. The English *Triumph's* heater was somewhat ineffective and slow to warm up. But it does have separate controls for the heater and defroster outlets, so that you can have heat at the feet and cool air at the face. Fresh-air ventilation was somewhat better than in the *Volvo*, but still poor. Both cars have ducts

VOLVO AND TRIUMPH continued

to direct heated air to the rear passengers' feet area; the *Volvo's* ducts are connected to the defroster control, the *Triumph's* work from the heater control.

Instrumentation on the *Volvo* followed the common pattern of gauges for fuel and water temperature and warning lights for oil pressure and for the generator not charging. The *Triumph* has an ammeter and a warning light for generator not charging. It also has lights for low fuel and choke in operation. The *Triumph* turn-signal control lever is on the right side of the steering column—an unfamiliar location for U.S. drivers. Pressing in on the turn signal lever flashes headlights for daylight signaling.

The *Triumph* has a large glove box—with built-in vanity mirror—and storage trays under both sides of the instrument panel. The *Volvo* has only a capacious tray under the passenger's side of the panel, map pockets in the front doors.

If we compare the *Triumph 2000* with the *Volvo 122S* strictly on the basis of CU's road tests, we get a mixed picture of merits and weaknesses, with the *Triumph* rated, in CU's judgment, slightly ahead on points. But of much more importance is a comparison of both cars with their natural competitors, the U.S. compacts. Our two test

cars compete fairly well in acceleration, but were very little better in economy. Since their smaller-displacement, harder-pressed engines suffer more from torque converter losses, however, both performance and fuel economy should be better with the manual transmissions.

The warranty for both of these cars cannot be transferred to subsequent owners; on all U.S. cars it can be. The *Triumph's* warranty covers parts for one year or 12,000 miles, labor for only the first six months or 6000 miles. The *Volvo's* warranty is good for only six months or 6000 miles. Most U.S. cars offer a warranty for 24 months or 24,000 miles. The general warranty period for Chrysler Corporation cars is 12 months or 12,000 miles for general coverage, plus a 50,000-mile or five-year specific warranty on the power train. In addition, U.S. compacts provide wider networks for parts and service.

The *Triumph 2000* is a relatively new and unknown car in the U.S. and it has yet to establish a Frequency-of-Repair record in CU surveys. Its resale value is also an unknown quantity. The *Volvo 122S*, selling about 20 to 1 over its rival, has a nine-year history of U.S. sales. Its Frequency-of-Repair record has been average, and its resale value is at least as good as that of the U.S.-car average. If either car appeals to you, we advise buying it with the manual transmission and, if it is the *Volvo*, with the optional power-assisted brakes.

COMPARING SOME SAFETY FEATURES

Many safety items that U.S. manufacturers now supply as standard equipment on their cars are available only as extra-cost options on the *Triumph* and *Volvo*. Neither car provides an outside rear view mirror, the combination of two-speed windshield wipers and a washer, or rear seat belts as standard equipment. The *Triumph* has seat belts in front and the *Volvo* has combined lap belts and shoulder harnesses in front, which many experts consider superior to a lap type belt alone. The *Triumph* has single-speed wipers (no two-speed option available) and a washer, the *Volvo* a two-speed wiper but no washer (option obtainable at about \$13). Both cars have padded instrument panels and sun visors, although the visor padding does not appear to CU to be of the energy-absorbing type. Both also have backup lights as standard equipment. Neither has the reduced-glare windshield wiper arms achieved by a satin chrome finish on American cars and an argent-paint finish on some European cars.

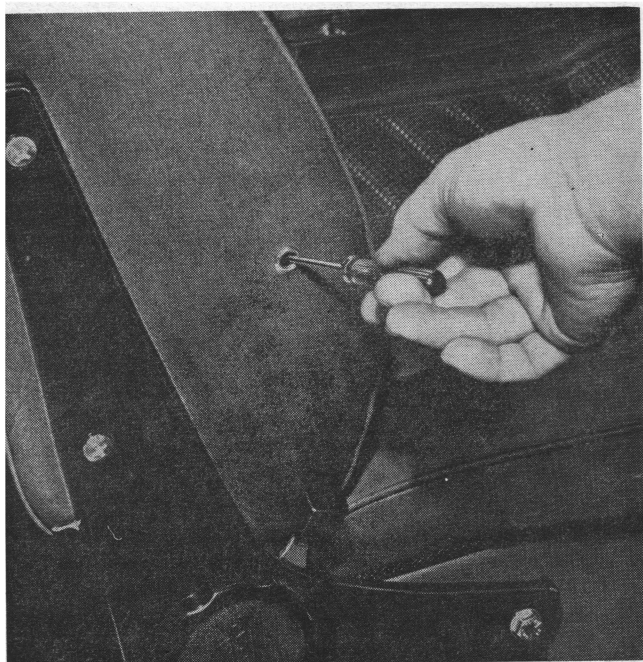
The *Triumph's* rack-and-pinion type of steering has no steering gear box as such. Its steering column has several universal joints, each having enough angularity to make it very unlikely, in CU's judgment, that the column will be driven back into the driver in a crash. The *Volvo* has a conventional type of steering box mounted far forward in the engine compartment, and an essentially straight column with one rubberized fabric coupling. A *Volvo* sales brochure claims that the "steering column . . . is designed to break away from you under most severe impacts." In the absence of crash test data, the validity of this claim cannot be established.

The inside mirror on the *Volvo* is rigidly mounted, as on most U.S. cars, but the *Triumph* mirror, which is not claimed to be of the breakaway type, actually can be broken from its plastic mounting by a sharp blow of the hand. For this reason, CU judged the *Triumph* mirror mount to be good.

The *Triumph* also has another good safety feature: in addition to the standard front and rear turn-signal lights, there is a set mounted on the body's center pillars that can be seen by pedestrians or drivers who are situated directly to one side of the car.

The following checklist compares some specific interior safety features. It is not intended to be a complete safety evaluation of each car and judgments made are relative.

	TRIUMPH 2000	VOLVO 122S
Absence of instrument panel hazards:		
Driver	Fair	Good
Passenger	Good	Poor
Safety of inside door handles	Fair-to-good	Fair-to-good
Padding, back of front seat	Very good	Good
Mirror mount	Good	Poor
Horn accessibility	Good—integral hub and spokes	Good—integral spoke and ring
Instrument panel controls:		
Identification	Fair	Fair-to-good
Separation of function	Good	Fair



Unique on the Volvo is a lower-back-support adjustment built into the back of the front seats. Turning a screwdriver in a slot as shown moves the lower part of the cushion in and out

GUIDE TO THE FACTS AND FIGURES

MFR'S SUGGESTED RETAIL PRICE. At Eastern ports of entry. Includes Federal tax and ocean freight but not local taxes, inland freight, or storage charges.

ROAD CLEARANCE. Distance from road surface to lowest part of car likely to hit high spots in road.

TURNING CIRCLE. Diameter of path traced by outermost tip of front bumper with wheels all the way left, as for a tight U-turn.

STEERING FACTOR. Number of turns of the steering wheel for a right-angle turn of 30-foot radius.

CURB WEIGHT. Weight of CU's test car, full of gas, oil, and water, ready (at the curb) for occupants.

TIRE RESERVE CAPACITY. Load-carrying ratings of the Tire and Rim Assn. for the front and rear tires (inflated to the car manufacturer's specifications for normal load) minus the actual front and rear weight of CU's test car with its maximum rated load distributed between the front and rear tires.

ACCELERATION. 0-60 mph and 1/4-mile runs with engine idling at start, transmission gears manually selected for optimum performance; 45-65 mph and 9% grade runs with floored accelerator, transmission shifting automatically. Times are rounded to the nearest 0.5 second.

BRAKING. Brake pedal effort for 1/2-g stop is one measure of the effectiveness of the braking system. The difference between this figure and the effort required for the tenth repeated 1/2-g stop is a measure of brake fade. Pedal effort in excess of 200 pounds would indicate the brakes failed the test.

ECONOMY. Constant-speed, level road tests offer controlled comparisons between cars, but in normal driving at comparable average speeds, mileage will be much lower. Traffic pattern involves acceleration, 35 mph maximum, idling, and an average speed for the course of about 21 mph. Overall gas mileages, not precisely comparable because of unavoidable driving differences, do indicate the general level to be expected. Miles per galloa are rounded to the nearest 0.5.

FACTS AND FIGURES

	Triumph 2000	Volvo 122S
MFR'S SUGGESTED RETAIL PRICE		
4-door sedan with automatic transmission	\$3145 ^A	\$2895 ^B
DIMENSIONS		
WHEELBASE (inches)	106	102
OVERALL LENGTH (inches)	174	173
OVERALL WIDTH (inches)	65	64
OVERALL HEIGHT, loaded (inches)	56	59
ROAD CLEARANCE, no load (inches)	6.6	6.7
with max. rated load (inches)	4.3	4.1
TURNING CIRCLE DIAMETER (wall-to-wall in feet)	36	34
STEERING FACTOR	0.93	0.71
LUGGAGE CAPACITY (2-suiters + week-end cases)	3 plus 2	2 plus 3
WEIGHT AND TIRES		
CURB WEIGHT (pounds)	2559	2433
PER CENT WEIGHT, front/rear	55/45	52/48
TIRE SIZE (inches)	6.50 x 13	6.00 x 15
TIRE RESERVE CAPACITY AT MAX. LOAD (pounds)	Front tires +335 Rear tires +36	+391 ^C +176 ^C
ENGINE^D		
TYPE	6	4
PISTON DISPLACEMENT (cubic inches)	122	109
COMPRESSION RATIO & FUEL REQD.	9.0 R	8.7 P
MAXIMUM ADVERTISED HORSEPOWER AT RPM	90 at 5000	95 at 5400
ENGINE REVS PER MILE, HIGH GEAR	3150	3405
PISTON TRAVEL PER MILE, high gear (feet)	1570	1785
AXLE RATIO	3.70	4.10
ACCELERATION		
ON LEVEL ROAD		
0 to 60 mph (seconds)	18.0	17.5
1/4 mile from rest (seconds)	22.0	21.0
Speed at end of 1/4 mile (mph)	66	66
45 to 65 mph (seconds)	12.5	11.5
CLIMBING A 9% GRADE		
from 30 to 40 mph (seconds)	5.0	6.0
from 30 to 50 mph (seconds)	19.5	22.5
TOP SPEED ON HILL (mph)	56 ^E	56 ^E
BRAKING		
LEVEL BRAKING FROM 50 MPH		
Pedal effort for 1/2-g stop (pounds)	40 ^F	85
Effort for 10th repeated stop (pounds)	75	120
ECONOMY		
CONSTANT-SPEED GAS MILEAGE		
at steady 30 mph (mpg)	32.5	30.5
at steady 40 mph (mpg)	32.0	29.0
at steady 50 mph (mpg)	30.0	27.5
at steady 60 mph (mpg)	26.0	24.5
TRAFFIC GAS MILEAGE (mpg in simulated traffic test)	17.5	18.0
OVERALL GAS MILEAGE (mpg for 2000 miles or more)	20.5	21.0
OIL CONSUMPTION (for 2000 miles or more in miles per quart)	1015	1035

^A Includes \$25 for dealer preparation.

^B Includes \$50 for dealer preparation.

^C Based on U.S. replacement 6.85 x 15 tire size.

^D From factory figures. ^E In second gear.

^F Power brakes are standard equipment.



RAVEL: *Gaspard de la Nuit*; **DEBUSSY:** *L'Isle Joyeuse*; **CHOPIN:** *Scherzo No. 4 in E (Op. 54)*; *Nocturne in B (Op. 62, No. 1)*. Vladimir Ashkenazy, piano. London CM 9472 (mono), \$4.79; CS 6472 (stereo), \$5.79.

Ashkenazy is a great pianist, and it would be hard to imagine a better performance of the impossibly difficult Ravel work. Notes roll from his fingers in predestined patterns, he has a subtle sense of color and just as good a sense of musical proportion. His Debussy is also beautiful. It is the Chopin that raises some questions. Here the Russian pianist sometimes tends to overinterpret, and he is especially fussy in the *B major Nocturne*. But the Ravel remains the finest performance on records. Ashkenazy has not been treated well by the engineers of this disc. The stereo contains surface noise, is over-monitored and in fortissimo passages has a clangorous tone that is not a true representation of Ashkenazy's art. At that it is better than the mono, which is dull and thick, and should be avoided.

VERDI: *Don Carlo*. Carlo Bergonzi, tenor (Don Carlo); Renata Tebaldi, soprano (Elizabeth); Nicolai Ghiaurov, bass (Philip II); Dietrich Fischer-Dieskau, baritone (Rodrigo); Grace Bumbry, mezzo-soprano (Eboli); Martti Talvela, bass (Inquisitor). Chorus and Orchestra of Royal Opera, Covent Garden, conducted by Georg Solti. London A 4432 (mono), 4 discs, \$19.16; OSA 1432 (stereo), 4 discs, \$23.16.

Verdi's great opera is given here with an all-star cast. Unfortunately some of the stars are not in best voice. Tebaldi works hard and her conception is rudimentary. Bumbry has temperament, but produces a spread, often

shrill sound. Fischer-Dieskau's voice sounds dry, and one misses an Italianate quality. The best singing is contributed by Bergonzi, a smooth tenor with a lovely lyric quality; and by Ghiaurov, who is most impressive when not singing too loud. Talvela sounds like a fine bass. On the whole this album is a disappointment, despite the fine conducting of Solti and the realistic recorded sound (in which the stereo, as in all opera recordings, has it all over the mono). This version of the opera is the four-act revision and not the one used by the Metropolitan Opera.

STRAVINSKY: *Agon*; **SCHULLER:** *Seven Studies on Themes of Paul Klee*. Boston Symphony conducted by Erich Leinsdorf. Victor LM 2879 (mono), \$4.79; LSC 2879 (stereo), \$5.79.

Seldom does a major orchestra turn its attention to late Stravinsky. The much-admired choreographic setting of *Agon* by Balanchine is in the permanent repertoire of the New York City Ballet, but the score has yet to enter the concert repertoire. It is admittedly a difficult one, in which seventeenth-century dance forms are passed through the Stravinsky filter and emerge purposely distorted and dissonant. *Agon* also is a pivotal work, being one of the first Stravinsky scores to contain elements of serial technique. Schuller's 1959 *Klee Studies*, on the other hand, has achieved a good deal of popularity with its easy-to-take modernism spiced with jazz. It is very *chic* and not very important. Leinsdorf conducts both works with characteristic thoroughness, and has received gorgeous recorded sound (especially in the Stravinsky, which is rich in brass). The stereo disc is much superior to the mono.

ELGAR: *The Dream of Gerontius*. Janet Baker, contralto; Richard Lewis, tenor; Kim Borg, bass. Hallé Chorus, Sheffield Philharmonic Chorus, Ambrosian Singers, and Hallé Orchestra conducted by Sir John Barbirolli. Angel B 3660 (mono), 2 discs, \$9.59; SB 3660 (stereo), 2 discs, \$11.59.

Composed in 1900, *The Dream of Gerontius* is considered Elgar's masterpiece. It is a large-scale choral work for soloists, orchestra, and chorus set to Cardinal Newman's poem. There seems to be a bit of an Elgar renaissance. Aside from the *Enigma Variations*, little of his music was heard in America for a long time, but the last few years have seen performances of such works as the *Cello Concerto*, *Falstaff*, the *Second Symphony* and *The Dream of Gerontius*. A revival of Elgar's music has long been overdue. He was a skilled technician, a great orchestrator and a melodist of no little ability. *The Dream of Gerontius* has some exceedingly beautiful things in it, and the score should be an eye-opener to those who have known the composer only by *Enigma* and *Pomp and Circumstance*. The present performance is the only one currently available, and it is superb. The three soloists are above the ordinary, the choruses are trained as only British choruses in British music can be, and in Sir John Barbirolli there is a conductor who is intimately acquainted with the music's style and personality. The only thing lacking in the recording is in the sound, which is good but not contemporary recording at its best. In both the mono and stereo versions, the big choral climax at the end of Side 3 sounds pinched and somewhat fuzzy. The stereo version, in addition, has an annoying tape hiss. The mono version is preferable, since there is no pronounced difference between it and the stereo; the stereo is just a little fuller.

MAHLER: *Symphony No. 4*. Judith Raskin, soprano, and Cleveland Orchestra conducted by George Szell. Columbia ML 6233 (mono), \$4.79; MS 6833 (stereo), \$5.79.

Like *The Dream of Gerontius*, the Mahler *Fourth Symphony* was composed in 1900. But where the Elgar work is seldom performed in this country, Mahler and his symphonies are all but overplayed. The last 20 years have seen an incredible reappraisal of the Austrian composer, and today he has emerged as one of the heroes of the late romantic movement. All of his nine symphonies have been recorded more

The records discussed here were selected by CU's music consultant to meet a range of classical taste, with musical interest always paramount and the emphasis on stereophonic releases. Judgments are made after listening to pressings of each record on carefully selected and maintained stereo equipment. While the technical quality of the records purchased for review generally has proved to be good, some have distortion and/or other bugs. Where such deficiencies have been heard by the

reviewer, they are noted in the accompanying reviews. Readers should be aware, however, that the tone controls of good record-playing systems can offer the opportunity to make even a bad recording tolerable to hear. The flat tone-control positions are not sacrosanct, and the intelligent listener should experiment with these controls to bring out the best in a record. The better the equipment, the more versatile the controls. Prices given are publishers' list, but substantial discounts are widely available.

than once, and the popular *Fourth*—the shortest and melodically the most appealing—has an imposing list of conductors on records: Reiner, Bernstein, Walter, van Beinum, Klemperer, and Solti. Now comes Szell and his great orchestra in the kind of clear, pinpointed, precise, and intelligent performance so typical of this conductor. This is one of the best of all available recordings, and it also has the virtue of Judith Raskin's sensitive and sweet-sounding delivery of the soprano solo in the last movement. Excellent recorded sound prevails in both the mono and stereo discs, and surfaces are quiet. The stereo is preferred; its spatial effects come through without gimmickry.

GILBERT AND SULLIVAN: *Princess Ida*. D'Oyly Carte Opera Company and Royal Philharmonic Orchestra conducted by Sir Malcolm Sargent. London A 4262 (mono), 2 discs, \$9.58; OSA 1262 (stereo), \$11.58.

Princess Ida has never been one of the all-time G&S favorites. But it should be. It was composed at the best period of the two collaborators—in 1884, between *Iolanthe* and *The Mikado*. It is the biggest of the operettas, in three acts as against the others' two. It is also the biggest in scoring and conception. Some find its libretto, a parody on women's education, based on Tennyson's poem, "The Princess," somewhat dated. It is hard to see why *Princess Ida* is any worse than any other G&S operetta. Some of the situations are as funny as anything in the G&S repertory. As a matter of fact, all of the operettas are dated in spots, but that does not seem to faze any Savoyard. *Princess Ida* has some marvelous music in it. For pure melody, Sullivan never exceeded Hilarion's "Ida was a twelve month old," or the trio "Expressive glances." There is no better ballad in operetta than Cyril's "Would you know the kind of maid," or no better patter song than the Arac-Guron-Scynthius trio "For a month to dwell," or no better musical parody than Arac's "This helmet, I suppose," which sounds as Handel as Handel. *Princess Ida* is full of such delights. The album comes with complete text, including the dialogue omitted in the recording. The stereo version has nice, lively sound. The mono is also good, though it does not bring the illusion of the stage that the stereo version presents.

SCHUBERT: Piano Sonata in A major (Posth.). Rudolf Serkin, piano. Columbia ML 6249 (mono), \$4.79; MS 6849 (stereo), \$5.79.

It is surprising that the only other available recording of this great piece of music is an inadequate presentation by Charles Rosen. A generation or so ago the big Schubert sonatas were seldom heard, and Schnabel was virtually the only major international pianist who featured them. But our generation

has taken the Schubert sonatas to its heart, and they are not only the common property of all pianists, but also popular with audiences. One would have thought that the posthumous *A major Sonata*, one of the very best, would have attracted many recording companies. At least, this new Serkin disc will take care of the problem for a long time to come. The distinguished pianist plays with his usual force and character, and with an unusual amount of lovely detail. Serkin always has been identified with the Austro-German school, and he brings to this music stringent musicianship and discipline. But he is more than a scholar. He takes a free point of view toward the music, phrasing with considerable latitude, avoiding any kind of pedantry and in general bringing a good deal of romanticism to his interpretation. This broad, moving, grand sonata could not be in better hands. Serkin must be a difficult pianist to record (and it is said that he does not like recording sessions). In the concert hall his tone is big, noble, and full of nuance. On records, though, it tends to be clanging and hard, and such is the case here. The mono has somewhat better definition than the stereo, but it cannot be called a top-notch recording job.

BRAHMS: Deutsche Volkslieder. Elisabeth Schwarzkopf, soprano; Dietrich Fischer-Dieskau, baritone; Gerald Moore, piano. Angel B 3675 (mono), 2 discs, \$9.59; SB 3675 (stereo), 2 discs, \$11.59.

Do not be deceived by the apparent simplicity of these songs. They are late (1894) works by Brahms. The entire collection consists of 49 settings of German folk songs, of which 42 are included here. (The other seven are scored for chorus.) Schwarzkopf and Fischer-Dieskau split the assignment, she singing the "feminine" songs, he the "masculine," and both coming together in songs that have both elements. The idea of singing several of these songs as a duet is unconventional, and is not sanctioned by the text; but no great harm is done, and the results are quite charming. There is no continuity to the songs in this album, and it is not the kind of music that should be taken in one long gulp. Rather it is an ideal collection into which to dip, enjoying a dozen or so songs at one sitting, then later coming back for more. The music is exceedingly attractive: lyric, sentimental in the best sense of the word, full of nostalgia and charm. Needless to say, two such fine singers as Schwarzkopf and Fischer-Dieskau, helped by the expert pianism of Moore, cannot help but make the music a rewarding experience. Some hiss mars the otherwise fine stereo discs; it is not as noticeable in the mono version. Though the stereo has a bit more presence, the difference is minimal, and the mono should do for all but the most discriminating.

DVORAK: Piano Quintet in A major. Peter Serkin, piano; Alexander Schneider and Felix Galimir, violins; Michael Tree, viola; David Soyer, cello. Vanguard VRS 1148 (mono), \$4.79; VSD 71148 (stereo), \$5.79.

The loveliest of piano quintets, and one of the loveliest pieces of chamber music ever written, here receives a nice, free performance by a group of expert musicians. Schneider and his colleagues (Peter Serkin is the son of Rudolf, and all of the players are regulars at Marlboro, the chamber music center dominated by the elder Serkin) go about it with plenty of leeway in matters of phrase and rhythm. Some unorthodoxies are present, but these are unorthodoxies only in terms of the severe attitude characteristic of most present-day musicians. Schneider tries to spark a more romantic view, and he and the others do not hesitate to make long ritards, or to use rubato effects, or to change tempo as the expression demands. As a result, some may call the performance mannered. But it seems to work up to the end of the last movement. Only there does an artificial feeling enter; the section before the coda is too drawn-out. Elsewhere the playing is bracing, and young Serkin's work is consistently spirited as well as pianistically elegant. The recorded sound is excellent, with honors going to the suaver, better-balanced stereo version.

SIBELIUS: Symphony No. 4; The Swan of Tuonela. Berlin Philharmonic Orchestra conducted by Herbert von Karajan. Deutsche Grammophon 18974 (mono), 138974 (stereo), both \$5.79.

Many consider the *No. 4 in A minor* the best of the seven Sibelius symphonies. It certainly is the most cryptic, the most interesting and the one that is closest to the stripped-down feeling characteristic of the mature Sibelius. Herbert von Karajan's approach is interesting, and altogether different from that of Serge Koussevitzky, who used to be the great Sibelius exponent. Where Koussevitzky was interested in color, even in so enigmatic and bleak a work as the *Fourth Symphony*, Karajan's interpretation is ultra-modern: unsentimental, businesslike, with tempos on the fast side and a concentration on smoothness of delivery rather than expressive content. Those who seek a more traditional view of the score can go to the Ansermet disc (London 9387, mono; 6387, stereo). But the Karajan is well worth considering, and the solo bits are played (as they are on *The Swan of Tuonela*, which fills out the last side) with exemplary finesse by the fine Berlin musicians. Deutsche Grammophon has provided its customary noiseless surfaces and clear recorded sound. The stereo disc has an edge, but only a slight one. Listeners with any but the very best equipment should not notice much difference.

MOVIES

CU makes no movie selections; it simply reports the summarized results of a continuing poll of readers, along with a consensus of critics' reviews. Pictures are rated as Excellent (E), Good (G), Fair (F), or Poor (P). Where opinion was divided, the first letter reflects the main vote.

SCORED EXCELLENT OR GOOD BY CRITICS AND BY 85% OR MORE OF CU'S REPORTING READERS

PICTURE	CU	Cr	PICTURE	CU	Cr	PICTURE	CU	Cr
BALLAD OF LOVE (Russian)—V. Fyodorova.....	GE	GE	HARPER—L. Bacall, P. Newman.....	G	G	RUN, APPALOOSA, RUN!—A. Palacios.....	G	G
BORN FREE—V. McKenna, W. Travers.....	GE	G	ITALIANO BRAVA GENTE (Ital.-Russian).....	GE	G	RUSSIANS ARE COMING—A. Arkin.....	GE	GE
CLOPPOTES (Fr.)—L. Ventura, C. Aznavour.....	G	G	JFK: YEARS OF LIGHTNING, DAY OF DRUMS.....	GE	GE	SHAKESPEARE WALLAH—F. Kendal.....	GE	GE
CLOUDS OVER ISRAEL (Hebrew)—Y. Spector.....	G	G	JULIET OF THE SPIRITS (Ital.)—G. Masina.....	GE	GE	SHOP ON MAIN STREET (Czech)—I. Kaminska.....	EG	E
DEAR JOHN (Swedish)—J. Kulle.....	GE	G	KHARTOUM—C. Heston, L. Olivier.....	G	G	SLEEPING CAR MURDER (Fr.)—S. Signoret.....	GE	G
DOCTOR ZHIVAGO—O. Sharif, J. Christie.....	EG	G	KING AND COUNTRY—T. Courtenay.....	GE	G	SPY WHO CAME IN FROM THE COLD.....	GE	G
ENDLESS SUMMER—Doc. on surfing.....	G	GE	LAST CHAPTER—Nar. by T. Bikel.....	GE	GE	THOUSAND CLOWNS—J. Robards, Jr.....	EG	GE
FLIGHT OF THE PHOENIX—J. Stewart.....	GE	G	LE BONHEUR (Fr.)—C. Drouot, J.-C. Drouot.....	GE	G	TOKYO OLYMPIAD—1964 Tokyo Olympics.....	GE	G
GOSPEL ACCORDING TO ST. MATTHEW (Ital.).....	EG	E	MY FAIR LADY—A. Hepburn, R. Harrison.....	EG	E	WHO'S AFRAID OF VIRGINIA WOOLF?.....	E	E
HAMLET (Russian)—I. Smoktunovsky.....	GE	GE	PATCH OF BLUE—E. Hartman, S. Poitier.....	EG	GE	WINNIE THE POOH & THE HONEY TREE.....	GE	GE

READERS' AND CRITICS' RATINGS OF OTHER PICTURES

PICTURE	CU	Cr	PICTURE	CU	Cr	PICTURE	CU	Cr
AGENT FOR H.A.R.M.—M. Richman.....	FP	P	THE GROUP—C. Bergen, J. Hackett.....	GF	FG	PROMISE HER ANYTHING—L. Caron.....	FG	FG
AGENT 38-24-36—B. Bardot, A. Perkins.....	PF	PF	GUNPOINT—J. Staley, A. Murphy.....	F	F	THE PSYCHOPATH—P. Wymark.....	FG	FG
ALPHABET MURDERS—A. Ekberg, T. Randall.....	GF	FG	HEROES OF TELEMAR—K. Douglas.....	GF	FG	RARE BREED—M. O'Hara, J. Stewart.....	GF	G
AND NOW MIGUEL—P. Card, M. Ansara.....	G	G	HOLD ON—S. Fabares, P. B. Noone.....	PF	PF	RASPUTIN—THE MAD MONK—C. Lee.....	F	F
APACHE UPRISING—C. Calvert, R. Calhoun.....	FP	FP	HOW NOT TO ROB A DEPT. STORE (Fr.).....	FG	F	RAT FINK—S. Hayden, H. Bokar.....	FG	FG
ARABESQUE—S. Loren, G. Peck.....	G	FG	IMPOSSIBLE ON SATURDAY (Fr.)—R. Hirsch.....	G	G	THE REPTILE—J. Daniel, N. Willman.....	F	F
AROUND THE WORLD UNDER THE SEA.....	FG	FG	INCIDENT AT PHANTOM HILL—R. Fuller.....	FP	FP	RIDE BEYOND VENGEANCE—M. Rennie.....	PF	P
ASSAULT ON A QUEEN—V. Lisi, F. Sinatra.....	FG	FG	INSIDE DAISY CLOVER—N. Wood.....	FG	FG	RUSSIAN ADVENTURE—Nar. by B. Crosby.....	FG	FG
BAND OF OUTSIDERS (Fr.)—A. Karina.....	G	G	JOHNNY RENO—J. Russell, D. Andrews.....	FP	F	SANDRA (Ital.)—C. Cardinale, J. Sorel.....	FG	FG
BATTLE OF THE BULGE—H. Fonda, R. Shaw.....	G	FG	JOHNNY TIGER—R. Taylor, C. Everett.....	F	F	SANDS OF BEERSHEBA—D. Opatoshu.....	F	F
BEAU GESTE—L. Nielsen, G. Stockwell.....	PF	PF	JUDEX (Fr.)—M. Vitold, C. Pollock.....	F	F	2ND BEST SECRET AGENT—T. Adams.....	F	F
BIG HAND FOR THE LITTLE LADY.....	G	G	JUDITH—S. Loren, P. Finch.....	G	FG	SECRET AGENT FIREBALL—R. Harrison.....	F	FG
BIG T.N.T. SHOW—Pop-tune review.....	PF	F	KID RODELO—J. Leigh, D. Murray.....	PF	F	SECRET SEVEN—H. Line, T. Russel.....	P	P
BLINDFOLD—C. Cardinale, R. Hudson.....	GF	FG	LA FUGA (Ital.)—G. Ralli, A. Aimee.....	F	FG	SEVEN WOMEN—A. Bancroft, M. Leighton.....	FG	FG
BLOOD BATH—M. Mathes, W. Campbell.....	FP	P	LADY L—S. Loren, P. Newman.....	FG	G	THE SILENCERS—S. Stevens, D. Martin.....	GF	FG
BLUE MAX—U. Anders, G. Peppard.....	FG	FG	LAS VEGAS HILLBILLIES—J. Mansfield.....	F	F	SINGING NUN—D. Reynolds, R. Montalban.....	FG	F
BOY CRIED MURDER—V. Hurst, P. Brown.....	F	F	LAST OF THE SECRET AGENTS?.....	PF	PF	SPY IN YOUR EYE—D. Andrews.....	FP	F
BOY, DID I GET A WRONG NUMBER!.....	FG	PF	LEMONADE JOE—O. Schoborova, C. Fiala.....	PF	PF	SPY WITH MY FACE—S. Berger, R. Vaughn.....	FG	G
BRIGAND OF KANDAHAR—R. Lewis.....	F	FG	LES BONNES FEMMES (Fr.)—B. Lafont.....	G	G	STAGECOACH—Ann-Margret, B. Crosby.....	GF	FG
CAST A GIANT SHADOW—K. Douglas.....	GF	FG	LIFE AT THE TOP—J. Simmons, L. Harvey.....	G	G	STOP THE WORLD—I WANT TO GET OFF.....	GF	FG
THE CAT—P. A. Garner, R. Perry.....	F	F	LORD LOVE A DUCK—R. McDowall.....	FG	FG	STUDY IN TERROR—J. Neville, D. Houston.....	F	F
THE CHASE—M. Brando, J. Fonda.....	GF	F	LOST COMMAND—A. Quinn, A. Delon.....	GF	GF	TAFFY AND THE JUNGLE HUNTER.....	FP	PF
CONTEST GIRL—J. Scott, I. Hendry.....	FG	FG	LT. ROBIN CRUSOE, U.S.N.—D. Van Dyke.....	F	F	TARZAN & THE VALLEY OF GOLD.....	F	PF
DESERT RAVEN—R. Romen, R. N. Terry.....	PF	PF	MADAME X—L. Turner, J. Forsythe.....	FG	FG	TEN LITTLE INDIANS—S. Eaton, H. O'Brien.....	GF	F
DIRTY GAME—H. Fonda, R. Ryan.....	F	F	MADE IN PARIS—Ann-Margret, L. Jourdan.....	F	F	TENTH VICTIM (Ital.)—M. Mastroianni.....	G	FG
DO NOT DISTURB—D. Day, R. Taylor.....	FG	F	MAKE LIKE A THIEF—R. Long, A. Lindman.....	F	FG	THAT MAN IN IST ANBUL—H. Buchholz.....	FG	FG
DR. GOLDFOOT & THE BIKINI MACHINE.....	F	F	MALE COMPANION (Fr.)—J.-P. Cassel.....	GF	FG	THIS PROPERTY IS CONDEMNED—N. Wood.....	G	G
DR. WHO AND THE DALEKS—P. Cushing.....	FG	FG	MAN CALLED ADAM—S. Davis, Jr.....	FG	FG	THREE ON A COUCH—J. Leigh, J. Lewis.....	FG	F
DON'T WORRY WE'LL THINK OF A TITLE.....	P	P	MAN COULD GET KILLED—M. Mercouri.....	FG	FG	TIKO AND THE SHARK—D. Samsol.....	F	F
DRACULA—PRINCE OF DARKNESS.....	FG	F	MANDRAGOLA (Ital.)—R. Schiaffino.....	GF	GF	TIME OF INDIFFERENCE—C. Cardinale.....	F	F
DUEL AT DIABLO—J. Garner, S. Poitier.....	FG	FG	MAYA—C. Walker, J. North.....	FG	FG	TO TRAP A SPY—L. Paluzzi, R. Vaughn.....	FG	F
ENGAGEMENT ITALIANO (Ital.)—A. Girardot.....	FG	FG	MODESTY BLAISE—M. Vitti, D. Bogarde.....	FG	FG	TORN CURTAIN—J. Andrews, P. Newman.....	FG	FG
ENOUGH ROPE (Fr.)—M. Vladi, M. Ronet.....	F	F	MOMENT TO MOMENT—J. Seberg.....	FG	FG	THE TRAMPLERS—J. Cotien, G. Scott.....	P	P
EVERY DAY IS A HOLIDAY—Marisol.....	FG	F	MONEY TRAP—E. Sommer, G. Ford.....	F	F	TROUBLE WITH ANGELS—R. Russel, H. Mills.....	GF	FG
FANTOMAS (Fr.)—J. Marais, L. de Funes.....	F	F	MORGAN!—V. Redgrave, D. Warner.....	G	GE	24 HOURS TO KILL—M. Rooney, L. Barker.....	F	F
FAT SPY—P. Diller, J. E. Leonard.....	P	P	MUNSTER, GO HOME—F. Gwynne.....	F	F	UGLY DACHSHUND—S. Pleshette, D. Jones.....	GF	G
FATHER OF A SOLDIER (Russian).....	GF	G	MURDER GAME—M. Landi, K. Scott.....	PF	PF	UP TO HIS EARS (Fr.)—J.-P. Belmondo.....	FG	FG
FINE MADNESS—J. Woodward, S. Connery.....	FG	FG	MYSTERY OF THUG ISLAND—G. Madison.....	P	P	VIVA MARIA (Fr.)—B. Bardot, J. Moreau.....	GF	FG
FIREBALL 500—F. Avalon.....	F	F	NAKED PREY—C. Wilde, G. Van Der Berg.....	FG	F	WACO—J. Russell, H. Keel.....	F	F
FLAME AND THE FIRE—Doc. by Gaisseau.....	FG	FG	NEVADA SMITH—S. McQueen, K. Malden.....	GF	FG	WALK, DON'T RUN—S. Eggart, C. Grant.....	G	GE
FRANKENSTEIN CONQUERS THE WORLD.....	PF	P	NIGHT OF THE GRIZZLY—C. Walker.....	F	PF	WALK IN THE SHADOW—J. Munro, M. Craig.....	G	G
FRANKIE AND JOHNNY—E. Presley.....	F	F	OHAYO (Japanese)—K. Shidara, M. Shimazu.....	FG	FG	WEEKEND AT DUNKIRK—J.-P. Belmondo.....	F	F
GERTRUD (Danish)—N. P. Rode.....	F	F	THE OSCAR—E. Sommer, S. Boyd.....	FG	F	WHAT DID YOU DO IN THE WAR, DADDY?.....	FG	FG
GHOST AND MR. CHICKEN—D. Knotts.....	GF	FG	OUR MAN FLINT—J. Coburn, L. J. Cobb.....	G	FG	WHEN THE BOYS MEET THE GIRLS.....	FP	F
GHOST IN THE INVISIBLE BIKINI.....	FP	F	OUT OF SIGHT—K. Jensen, J. Daly.....	P	P	WHERE THE SPIES ARE—D. Niven.....	GF	FG
GIRL-GETTERS—J. Merrow, O. Reed.....	G	G	PARADISE—HAWAIIAN STYLE—E. Presley.....	FP	F	WILD, WILD WINTER—G. Clarke, C. Noel.....	FP	P
GLASS BOTTOM BOAT—D. Day, R. Taylor.....	GF	FG	PLAGUE OF THE ZOMBIES—A. Morell.....	F	F	WILD, WILD WORLD—Nar. by E. Bracken.....	PF	PF
GREAT SPY CHASE—L. Ventura, M. Darc.....	PF	PF	PLEASURE GIRLS—F. Annis, T. Tanner.....	F	F	YOUNG WORLD (Fr.)—C. Delaroché.....	FG	FG

RETURNS AREN'T IN (BUT SCORED EXCELLENT OR GOOD BY CRITICS)

CUL-DE-SAC—F. Dorleac, D. Pleasence
GOOD TIMES, WONDERFUL TIMES—Dir. L. Rogosin
HOW TO STEAL A MILLION—A. Hepburn, P. O'Toole

JOSEPH KILIAN (Czech)—K. Vasicek
MAN AND A WOMAN (Fr.)—A. Aimee, J.-L. Trintignant
THE SUCKER (Fr.)—Bourvil, L. De Funes

SWEET LIGHT IN A DARK ROOM (Czech)—D. Smutna
THE UNCLE—R. Duncan, R. Davies
WRONG BOX—R. Richardson, J. Mills

CU would like to have as many readers as possible participate in its movie poll. If you attend the movies fairly regularly, and would like to take part,

please write to Movie Reviews, Consumers Union, 256 Washington Street, Mt. Vernon, N.Y. 10550, asking for a supply of postage-paid rating cards.

LETTERS

continued from page 422

microbial agents build up on the skin and reduce the number of microbes normally resident there. Thus they eliminate or reduce the odor caused by bacterial action on the skin's secretions (there are other possible sources of body odor, however). Though there have been some claims that the antiseptic soaps prevent certain skin eruptions (including acne), the claims, CU's medical consultants point out, are not supported by convincing clinical evidence.

Thus the only reason for using an antiseptic soap is for the deodorizing action, which must be weighed against the small but real chance of a skin reaction. If a rash occurs on anyone using such a soap, CU's medical consultants advise that he switch immediately to a nonmedicated soap. If the rash then clears up and he wants to return to a deodorant soap, he should be careful to change to another brand with different active ingredients (the list is required to be on the label). For example, a former user of *Safeguard* might try *Dial*, but would be unwise to try *Lifebuoy*.

Bargain—for the eagle-eyed

One of our local dime stores recently advertised a "sale" on a lightweight luggage set—5 pieces for \$22.50. The ad then listed individual prices for the five cases bought separately—three at \$3.97, two at \$2.97 each. If you total these separate prices, you will see that they come to less than \$18. When I phoned the store, I was told that, since I had added the items and arrived at a lower figure than the sale price of \$22.50, they would sell me the set at the lower price. I wonder how many people actually paid \$22.50, thinking they were getting a bargain. SEATTLE, WASH. O.A.

The price of fluorides

Our town does not put fluorine in the water, and because of a concern for the children's teeth, I asked our doctor about using fluoride tablets. He told me it was available as a part of a vitamin compound. I told him we ate a balanced diet and did not want to pay for unnecessary vitamins. His reply was that since it was unusual to purchase the fluoride compound by itself, it might well be more expensive that way.

The local druggist had plenty of the vitamins with fluoride in stock, but no tablets of fluoride alone. I told him my only interest was in enough fluoride to protect my children's teeth, and asked what was the cheapest thing he could sell me. Checking his book he found the fluoride pills at a price way below the cost of the vitamin-fluoride

Continued on next page

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L-128

When does my subscription expire?

You can answer this question, which often shows up in CU's mail, by looking at the address label of your latest copy of the magazine. For the sake of efficiency, CU has recently made some changes in its address stencils: it has adopted an alpha-numerical system. The letter and number now appearing in the upper right-hand corner of the address label designate the expiration date of your subscription. The letter represents the month, starting with A for January and running through to L for December. The number is the last digit of the year—6 in the case of 1966. Other items on the top line of the address label are various codings to help CU service subscriptions in an improved manner.

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LETTERS continued

compound. Our doctor wrote the prescription for these pills. How strange the doctor did not know about this cost-saving option. Possibly you have other subscribers who would be interested in this information.

MOUNT VERNON, IOWA

A.S.

The doctor's failure to keep up on the retail economics of drugs, though certainly deplorable, is not too surprising, considering the vast amount of literature on drugs he has to sift through (educational, promotional, and inextricable mixtures of both). The big bombardments, of course, come from promoters of the relatively expensive forms of a drug, and the doctor's attention may never be called to the inexpensive forms unless he deliberately sets out to search for such information.

CU's medical consultants believe that patients are well advised to approach their doctors with the intelligent questioning attitude used here by A.S. In the final analysis, of course, the doctor's judgment must prevail.

A country doctor protests

I disagree with your article favoring S.2568 (which would prohibit doctors from profiting on products they prescribe). Maybe a number of physician-owned pharmacies are taking advantage of patients; however, this bill would also prohibit those of us in rural practice from dispensing drugs. We have no pharmacy in Sycamore; therefore, my patients would be forced to drive 10 to 15 miles to have a prescription filled, then back home before the medication could be taken. By making a small profit on the drugs I dispense, I am able to charge less for my professional service. This helps me keep my charges at a very reasonable level. Moreover, by dispensing drugs, I am kept aware of the cost of drugs, and am better able to keep the patients' expenses reasonable.

SYCAMORE, OHIO

D.P.S., M.D.

We are sure that many doctors who dispense drugs as Dr. D.P.S. does do so with the patient's interest foremost. But patients as a rule have no way of telling them from the outright profiteers. Hence, our support for the principle espoused in Senator Hart's bill.

The bill probably should make an exception of doctors who practice where pharmacies are far away. They should be allowed at least enough of a markup to cover their cost of inventory and overhead. But it doesn't seem to us that the use of drug profits to keep down fees for professional service is really in the best interest of either the medical profession or patients.

CUMULATIVE INDEX

FOR CONTENTS OF THIS ISSUE SEE PAGE 423

The index in this issue includes principal subjects covered in the preceding 11 regular issues of CONSUMER REPORTS. (The December Buying Guide Issue, for use through 1966, carries its own index, which covers virtually all product reports published during 1965, plus a number of earlier ones.) Page numbers run consecutively for each year; 1965 issues appear in regular type, 1966 issues in **heavy type**. Sequences are as follows:

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An asterisk (*) indicates comparative Ratings or discussion by brand names;
a bullet (•) indicates corrections or follow-up notes on asterisked reports.

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